

Environmental Protection Agency
FY 2000 Annual Performance Plan and Congressional Justification
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Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Reduction of Global and Cross-border Environmental Risks

Strategic Goal: The United States will lead other Nation's in successful, multilateral efforts to reduce significant risks to human health and ecosystems from climate change, stratospheric ozone depletion, and other hazards of environmental concern.

Resource Summary (Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Reduction of Global and Cross-border Environmental Risks	\$398,286.4	\$229,366.9	\$407,414.2	\$178,047.3
Reduce Transboundary Threats: Shared North American Ecosystems	\$120,392.3	\$71,025.9	\$119,987.5	\$48,961.6
Climate Change	\$232,960.4	\$127,968.9	\$242,765.0	\$114,796.1
Stratospheric Ozone Depletion	\$26,914.3	\$17,033.8	\$27,046.5	\$10,012.7
Protect Public Health and Ecosystems From Persistent Toxics	\$6,883.2	\$4,125.8	\$6,943.1	\$2,817.3
Achieve Cleaner and More Cost-Effective Practices	\$11,136.2	\$9,212.5	\$10,672.1	\$1,459.6
Total Workyears:	530.2	522.4	519.9	-2.5

Background and Context

Air, water, and waste pollution crossing our borders with Mexico and Canada can imperil the health, environment and well-being of people in the United States. Thus, international cooperation is critical to achieving EPA's mission.

Depletion of the stratospheric ozone layer increases the amount of the sun's ultraviolet radiation reaching the earth's surface. Climate change, pollution of the oceans and irreversible loss of species and habitats worldwide undermine the resource base critical to our well-being and quality of life and deprive us of commercially valuable and potentially life-saving genetic materials. EPA's continued leadership is necessary to build the international cooperation and technical capacity that are essential to prevent harm to the global environment and ecosystems that we share with other nations. A coordinated international response is needed to confront the climate change threat, depletion of the stratospheric ozone layer, transboundary circulation of toxics, and other environmental issues significant to the interests of the United States.

Means and Strategy

Pollutants are oblivious to geographic and political boundaries, and their propensity to migrate threatens human health and the environment, demanding coordinated international action. The United States addresses global environmental problems, such as climate change and stratospheric ozone depletion, through bilateral and multilateral consultations and agreements. Other problems are not global but cross borders, such as between the US and Mexico, and between the US and Canada. In the Great Lakes, and in our marine and Arctic environments, EPA uses a geographic approach to direct environmental action.

EPA will use a variety of approaches to prevent harm to the global environment and ecosystems including: 1) forming bilateral and multilateral environmental agreements, environmental foreign policy initiatives, and regional and global negotiations; 2) cooperating with other countries to ensure that domestic and international environmental laws, policies, and priorities are recognized and implemented; 3) working with other federal agencies, states, business, and environmental groups to promote the flow of environmentally sustainable technologies and services worldwide; facilitating cooperative research and development programs; and international technical assistance, training and information exchange; and 4) and promoting public/private partnership programs to reduce greenhouse gas emissions.

Greenhouse gases, for example, are produced by burning coal, oil, and natural gas to heat our homes, power our cars, and illuminate our cities. Deforestation and land clearing also contribute to the production of greenhouse gases. These gases may have several environmental effects: raising atmospheric and ocean temperatures, ultimately changing weather patterns; increasing evaporation, drying soil and increasing drought; increasing precipitation and its intensity, causing floods; increasing incidences of heat waves; and raising sea levels.

Possible adverse consequences for human health include: increasing numbers of deaths associated with heat waves; increasing incidence of allergic disorders; and increasing diseases that thrive in warmer climates, such as malaria, yellow fever, dengue fever, encephalitis, and cholera. Since the early 1990s, EPA has been building partnerships with businesses in all sectors of the economy in order to meet the 1990 Framework Convention on Climate Change (FCCC) objective to stabilize greenhouse gases emissions at 1990 levels. EPA also plays a major role in the President's Climate Change Technology Initiative (CCTI), launched in October, 1997, and included in the 1999 Budget.

Research

EPA's research and assessment activities will evaluate the potential consequences of global change and climate variability in the United States. These assessments will focus on evaluating the impacts of global change on human health, ecosystems, and economic systems at regional, state, and local scales. Among the impacts the agency will examine are the spread of vector-borne and water-borne disease, changes in landscape cover and the migration of plant and animal species, and changes in farm productivity and food distribution. These research and assessment activities are an integral part of the U.S. National Assessment Process of the U.S. Global Change Research Program.

Strategic Objectives and FY 2000 Annual Performance Goals

Objective 01: Reduce Transboundary Threats: Shared North American Ecosystems

- By: 2000 9 additional water/wastewater projects along the Mexican border will be certified for design-construction for a cumulative total of 34 projects.
- By: 2000 Assess and report on the state of key Great Lakes ecosystem components, report current status and trend information to Great Lakes environmental managers, and coordinate measurement of SOLEC environmental indicators applicable to the entire Great Lakes Basin.

Objective 02: Climate Change

- By: 2000 Assess the consequences of global change and climate variability at a regional scale.
- By: 2000 Greenhouse gas emissions will be reduced from projected levels by more than 50 million metric ton carbon equivalent per year through EPA partnerships with businesses, schools, State and local governments, and other organizations. Reduction level will increase 10 million metric tons over 1999.
- By: 2000 Reduce energy consumption from projected levels by more than 60 billion kilowatt hours, resulting in over \$8 billion in energy savings to consumers and businesses that participate in EPA's climate change programs. Increase of 15 billion kilowatt hours & \$5 million in annual energy savings over 1999.
- By: 2000 Demonstrate technology for a 70 mpg mid-size family sedan that has low emissions and is safe, practical, and affordable.

Objective 03: Stratospheric Ozone Depletion

- By: 2000 Restrict domestic consumption of class II HCFCs below 208,400 metric tonnes (MTs) and restrict domestic exempted production and import of newly produced class I CFCs and halons below 130,000 MTs.

Objective 04: Protect Public Health and Ecosystems From Persistent Toxics

- By: 2000 Successfully conclude international negotiations on a global convention on Persistent Organic Pollutants (POPs) reaching agreement on POPs selection criteria, technical assistance, and risk management commitments on specified POPs.

Objective 05: Achieve Cleaner and More Cost-Effective Practices

By: 2000 Deliver 30 international training modules; implement 6 technical assistance/technology dissemination projects; implement 5 cooperative policy development project; & disseminate info products on US environmental technologies and techniques to 2500 foreign customers.

Highlights

EPA's continued leadership is necessary to build the international cooperation and technical capacity that are essential to prevent harm to the global environment and ecosystems that we share with other nations. In 2000, EPA will use a variety of approaches to prevent harm to the global environment and ecosystems.

Recognizing that no single country can resolve the problem of global climate change, EPA will help facilitate the international cooperation necessary to achieve the stabilization of greenhouse gas concentrations. The 1992 Framework Convention on Climate Change (FCCC) set the objective of stabilizing greenhouse gas concentrations at a level that would prevent dangerous anthropogenic interference with the climate system. On the domestic side, EPA will encourage voluntary partnerships, provide technical assistance and promote State and local efforts to achieve future greenhouse gas emission reductions. Administration-wide, the programs launched in the 1993 Climate Change Action Plan have the potential to reduce U.S. greenhouse gas emissions by over 160 million metric tons of carbon equivalent (MMTCE) annually by the year 2010.

The Agency will contribute to the science underpinning U.S. policy, including the assessment of consequences of climate change and climate variability. Particular attention will be paid to the potential beneficial and detrimental consequences of climate variability and change for human health, ecosystems, and economic systems at the regional, state and local levels. EPA will play a major part in peer-reviewed economic and policy analyses that serve U.S. policy-makers and international negotiators.

To protect the earth's stratospheric ozone layer, EPA will continue to regulate ozone-depleting compounds and foster the development and use of alternative chemicals in the U.S. and abroad. The United States response to the harmful effects of stratospheric ozone depletion is its commitment to honor the Montreal Protocol by phasing out domestic production of ozone-depleting substances (ODSs). EPA's role stems from the Protocol and Title VI of the Clean Air Act Amendments of 1990. EPA helps other countries find suitable alternatives to ODSs, informs the public about the dangers of overexposure to UV radiation, and uses pollution prevention strategies to require the recycling of ODSs and hydrofluorocarbons.

Reduced risks from toxics, especially persistent organic pollutants and selected metals that circulate in the environment at global and regional scales, will be achieved by working with the Department of State and other countries to control the production and use or phaseout of targeted chemicals. EPA is also working to reach agreement on import and export requirements applicable to certain chemicals, an expansion of pollutant release and transfer registers and the harmonization

of chemical testing, assessment and labeling procedures. The goal of international harmonization of test guidelines is to reduce the burden on chemical companies of repeated testing in satisfying the regulatory requirements of different jurisdictions both within the United States and internationally. Harmonization also expands the universe of toxic chemicals for which needed testing information is available, and fosters efficiency in international information exchange and mutual international acceptance of chemical test data. For test guideline harmonization, EPA will continue to cooperate closely with other Federal agencies and the Organization for Economic Cooperation and Development (OECD) in harmonizing testing guidelines.

Internationally, the Agency will oversee the implementation of the of the global POPs convention and continue our efforts in reducing the use of leaded gasoline globally. Working with Canada, we are moving to reduce sulphur dioxide and nitrogen oxide emissions that cause acid rain, and protect shared ecosystems along our northern border. EPA will assess and report on the state of Key Great Lakes ecosystem components, provide current status and trend information and coordinate measurement of environmental indicators applicable to the entire Great Lakes Basin. Through open lake and nearshore sediments monitoring, and the joint Great Lakes National Program Office (GLNPO) Canadian integrated atmospheric deposition network reports will be issued on, or developed for, the 15 GLNPO "Monitoring Indices."

The U.S. is working with other OECD member countries to implement the International Screening Information Data Set (SIDS) program, a voluntary international cooperative testing program started in 1990. The program's focus is on developing base-level test information (including data on basic chemistry, environmental fate, environmental effects and health effects) for international high production volume chemicals. SIDS data will be used to screen chemicals and to set priorities for further testing and/or assessment. The Agency will review testing needs for 50 SIDS chemicals in 2000.

To reduce environmental and human health risks along the U.S./Mexico Border, EPA is working with the border states and Mexico in a multi-media approach targeted at air and water quality and hazardous waste management and disposal. Nine working groups will address key issues working closely with state and local agencies on both sides of the border. EPA will also support the financing and construction of wastewater treatment and solid waste facilities.

The Agency will focus attention on concern for children exposure to environmental tobacco smoke. The focus of the Agency's international program is to improve the protection of children's health from environmental threats by: prioritizing the research needs identified, seeking to allocate research among countries and international organizations, agreeing on timelines, and developing international reporting mechanisms. In addition, EPA is focusing on those Sub-Saharan Africa countries and specific sectors (i.e., refineries, mining companies, and stockpilers of agricultural chemicals) in those countries which are major contributors to globally circulating chemical/toxic risks, focusing on pesticides, mercury and lead.

Research

Research and assessment activities will examine the potential consequences of climate change for human health and ecosystems in three regions in the United States: the Mid-Atlantic, the Gulf of Mexico, and the Great Lakes regions. EPA will assess the possibility of changes in disease patterns due to changing climate, the impact of heat stress on populations, especially the elderly and children, and the socioeconomic consequences of extreme weather events, such as hurricanes, floods, and droughts. Researchers will also analyze the impact of climate change and variation on the ability of ecosystems to provide services that many of us rely on but often take for granted, such as water filtration and air purification. The outcome of these assessments will help inform decision making regarding strategies to address possible changes and variations in climate.

External Factors

The success of EPA's programs and activities under Goal 6 will depend on active participation by other nations: both developed and developing countries. Reduction of air, water, and waste problems along the U.S. border with Mexico will require continued commitment by national, regional and local environmental officials in that country. Similarly, EPA's efforts to reduce global and regional threats to oceans and the atmosphere will require active cooperation of other countries. Health and environmental benefits resulting from the multi-billion dollar investment by U.S. companies to reduce emissions of stratospheric ozone depleting compounds could be completely undone by unabated emissions of these chemicals in other countries. Fortunately, the Montreal Protocol on Substances that Deplete the Ozone Layer has secured the participation of most countries, including major producers and consumers of these chemicals.

While many factors outside of EPA or U.S. control determine a nation's willingness to participate in international environmental protection efforts (e.g., economic or political considerations within the country), EPA's international policy and technical exchange programs can play an important role in convincing particular nations of both the need and feasibility of participating. Other factors affecting EPA's programs under Goal 6 include continued Congressional and public support; cooperation with other Federal agencies, such as the State Department and the U.S. Agency for International Development; and collaboration with state and local groups, business and industry groups, and environmental organizations.

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Reduction of Global and Cross-Border Environmental Risks

Objective # 1: Reduce Transboundary Threats: Shared North American Ecosystems

By 2005, reduce transboundary threats to human health and shared ecosystems in North America, including marine and Arctic environments, consistent with our bilateral and multilateral treaty obligations in these areas, as well as our trust responsibility to tribes.

Resource Summary

(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Reduce Transboundary Threats: Shared North American Ecosystems	\$120,392.3	\$71,025.9	\$119,987.5	\$48,961.6
Environmental Program & Management	\$20,392.3	\$21,025.9	\$19,987.5	(\$1,038.4)
State and Tribal Assistance Grants	\$100,000.0	\$50,000.0	\$100,000.0	\$50,000.0
Total Workyears:	\$83.0	\$81.8	\$81.8	\$0.0

Key Programs

(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Great Lakes National Program Office (CWAP)	\$13,314.6	\$14,614.6	\$13,367.5
Water Infrastructure:Mexico Border	\$100,000.0	\$50,000.0	\$100,000.0
U.S. - Mexico Border	\$4,707.2	\$10,642.8	\$5,056.3
Partnership with Industrial and Other Countries	\$1,642.0	\$784.0	\$816.1

FY 2000 Request

EPA's activities under this objective address transboundary environmental threats along the U.S. border areas, in shared North American ecosystems, as well as in the Great Lakes. Activities

focus on the U.S.-Mexico Border, the U.S.-Canada Border, the Great Lakes Program, and marine and Arctic environments.

U.S.-Mexico Border

Along the 2,000 mile U.S.-Mexico border, communities live side-by-side, sharing the benefits of rapid economic growth and the subsequent environmental problems. Today, there are more than 11 million border residents, a population that has doubled in the last 15 years. The effects of urban and industrial growth has contributed to the problems of inadequate environmental infrastructure. EPA's Mexico border area programs are designed to (1) improve air quality, (2) provide wastewater and drinking water services to under served communities, (3) manage chemical accidents, (4) support pollution prevention programs that will, over the long term, reduce the adverse health and environmental effects of pollutants, and (5) reduce and effectively manage hazardous and solid wastes. EPA's base programs will continue efforts in establishing air monitoring networks and completing emissions inventories in non-attainment areas. These are basic activities that must be done prior to developing strategies for improving air quality. The completion of joint chemical accident contingency plans in border sister cities will further reduce the risk to human health and ecosystems due to chemical spills. Working with sister cities and the Government of Mexico will greatly enhance the governments of the U.S.' and Mexico's ability to expand the use of tracking systems for hazardous waste shipments across the US-Mexico border, thus enabling more efficient and accurate tracking of waste, and providing a tool for enforcement of waste disposal regulations, decreasing the risk of exposure due to noncompliance.

A significant portion of residents along the U.S.-Mexico border area are without adequate basic services such as potable water and wastewater treatment and the problem has become progressively worse in the last few decades due to expanding urbanization. Identified wastewater infrastructure needs along the U. S./Mexico border are estimated to be \$2.8 billion. The Agency has established a goal of 34 high priority projects to have been certified for design-construction by the end of 2000. Within this objective, the Agency is requesting \$100,000,000 to support these efforts, largely through the Border Environmental Infrastructure Fund (BEIF). The Agency will cooperate with its Mexican counterpart agencies to implement the provisions of the LaPaz Agreement and the Border XXI Framework Document which provide a long term strategy to improve public health and the environment and protect essential natural resources in the border. Nine binational working groups will address key issues working closely with state and local agencies on both sides of the border. EPA will also work closely with the Border Environment Cooperation Commission (BECC) and the North American Development Bank (NADBank), which manages the BEIF, to support the financing and construction of water and wastewater treatment and solid waste facilities. EPA is proposing \$1,000,000 for the U.S.-Mexico Foundation for Science in cooperation with the programs, activities and projects of the BECC, NADBank, International Boundary and Water Commission (IBWC) and the Mexican Combustion Nacional de Agua.

Great Lakes

Within this objective, EPA is requesting \$13,494,800 and 46.2 total workyears for the Great Lakes National Program Office (GLNPO) and supporting Great Lakes activities. The Great Lakes Basin is home to 33 million people, including more than one-tenth of the population of the United States. It contains some of the world's largest concentrations of industrial capacity and, at the same time, is the largest system of fresh, surface water on earth, containing 20% of the world's supply. The effects of years of urban and industrial growth necessitate efforts to reduce pollution from toxic substances, with an emphasis on persistent, bioaccumulative substances, and to protect and restore vital habitats and biological integrity. The Agency's Great Lakes National Program Office steers and coordinates these efforts through implementation of an ecosystem approach in the Great Lakes among its Federal, state, tribal, and local partners, fully implementing a "community-based" approach. GLNPO and its partners will act consistently with goals of the Great Lakes Five Year Strategy and the Agency's Strategic Plan.

EPA will assess and report on the state of key Great Lakes ecosystem components, make current status and trend information available to Great Lakes environmental managers, and coordinate measurement of environmental indicators applicable to the entire Great Lakes Basin. Through open lake and nearshore sediments monitoring, and the joint GLNPO/Canadian integrated atmospheric deposition network (including air monitoring stations on each Great Lake), reports will be issued on, or developed for, 9 of the proposed 12 GLNPO "Monitoring Indices." The Indices will summarize the prior year's data on select fish contaminants, atmospheric deposition, limnology, biology, and sediments, thus providing state and Federal environmental managers with information for decision-making and providing the public with understandable information about the environmental condition of the Great Lakes. GLNPO will adjust its monitoring program to implement indicators monitoring consistent with the Indices and with indicators identified through the process developed for the biennial State of the Lakes Ecosystem Conference (SOLEC). SOLEC brings together representatives of the public and private sectors to facilitate decision-making based upon sound environmental information. GLNPO will report model predictions for Lake Michigan toxic reduction scenarios from the multi-media initiative for the first-ever intensive monitoring of Lake Michigan air, water, sediments, and biota (the Lake Michigan Mass Balance Study, or ~~AL~~MMB[®]), supporting the Great Waters provision of the Clean Air Act and §118 of the Clean Water Act. This will enable the Agency and its partners to determine how to further reduce Great Lakes pollutants and will provide trend and baseline data to support and target remedial efforts and measure environmental progress under Remedial Action Plans and Lakewide Management Plans. EPA will also expand public access to LMMB and other Great Lakes environmental information via the Internet.

EPA will work with Environment Canada and lead domestic partners in implementing the Great Lakes Binational Toxics Strategy, signed in 1997. The Strategy, a ground breaking international toxics reduction effort, targets a common set of persistent, toxic substances for reduction and virtual elimination from the Great Lakes. It focuses on pollution prevention efforts, using voluntary and regulatory tools to achieve reductions, and contains reduction challenges for a targeted set of substances, e.g., mercury, PCBs, dioxins/furans, and certain canceled pesticides. Actions and activities are outlined in the Strategy which states, industry, tribes, non-government organizations and other stakeholders may undertake to achieve these reductions. Each targeted

substance will be addressed at the appropriate phase of an analytical framework which consists of information gathering, analysis of current regulations/initiatives, identification of options and implementing reduction actions. Grants to stakeholders (such as the Great Lakes States, Tribes and environmental groups for mercury or PCB reduction projects) will help to achieve some of the reduction targets. Progress will be documented. Implementation of the Strategy will be coordinated with and augmented through cross-Agency support and activities relating to its 1999 Persistent Bioaccumulative Toxics Initiative.

EPA, with its partners, will continue to address the contaminated sediments polluting the harbors of the 31 U.S. and/or binational Areas of Concern (AOCs) in the Great Lakes. Using expertise from the Congressionally mandated Assessment and Remediation of Contaminated Sediments program, GLNPO uses its Research Vessel (R/V) Mudpuppy and other resources to visit sites and assess sediments, returning as needed for finer scale assessment and remedial design. If a community then chooses to remediate the sediments, GLNPO can conduct a sediment site cleanup demonstration. In 2000, GLNPO will assist communities with assessments and remedial design at 5 AOCs, thus having provided this assistance at 25 AOCs since this program began. Two of the AOCs will be visited for the first time. GLNPO will complete 1 sediment cleanup demonstration, bringing the total cleanups to 4 since 1996.

The Agency will support the efforts of States, Tribes, and local communities to protect and restore important habitats identified in the Great Lakes biodiversity report of The Nature Conservancy (TNC) and SOLEC habitat papers. The program emphasizes habitats important for biodiversity and ecological integrity (such as those necessary for endangered and threatened species). Additional projects for ecological enhancement will start in nearshore waters, coastal wetlands, river corridors, and terrestrial lands. The projects will implement measures to protect ecological communities and biodiversity or take steps to restore ecological functions and processes.

EPA, Regions, States, and local communities will strategically target reductions of critical pollutants through Remedial Action Plans for Areas of Concern and through Lakewide Management Plans for Lakes Ontario, Michigan, Superior, and Erie. The Agency will continue to meet specific requirements for reporting to Congress and the International Joint Commission regarding progress under the Great Lakes Water Quality Agreement.

Marine and Polar Environments

Within this objective, the Agency is requesting \$524,600 for international activities protecting our most northern borders and marine environments. The focus of the base program is the protection of those resources in the marine and polar environments that are important to the United States and other countries. More specifically, the programs will reduce environmental damages associated with tributyltin, ballast water discharges, and ocean dumping. In addition, on-going efforts to address land-based sources of marine pollution in the Wider Caribbean should result in improvements in regional water quality and marine habitats that include economic benefits to significant commercial interests in the Region. Finally, our involvement in multilateral negotiations is critical to maintain needed flexibility in domestic rulemaking and other environmental policy mechanisms.

The 2000 performance goals address activities relating to long-term achievement of the objective. The first pertains to the conclusion of negotiations on a regional agreement addressing land-based marine pollution; the second concerns different global negotiations underway through the International Maritime Organization. The combination of these goals represent incremental components in seeking to prevent significant degradation of the marine and polar environments over the long-term. Completion of the regional protocol on land-based marine pollution will provide the first instrument in the Wider Caribbean for establishing international norms for specific contaminants and effluents. Achievement of our goals in negotiations underway at the International Maritime Organization will enhance the effectiveness of existing domestic environmental controls and reduce pollution of U.S. waters resulting from international shipping.

FY 2000 Change from FY 1999 Enacted

EPM

- (+\$52,900) to reflect a payroll cost of living adjustment and regional travel increase for the Great Lakes National Program Office.
- (+\$159,000) to reflect a payroll cost of living increase and a modest increase to support activities associated with hazardous waste disposal along the US- Mexican border.
- The 2000 Request is \$1,300,000 below the 1999 Enacted budget level due to Congressional earmarks received during the appropriations process but not part of the 2000 President's Request.

STAG

- (+\$50,000,000) to the Mexico Border Infrastructure Program. This reflects the Administration's commitment for funding infrastructure needs along the U.S./Mexican Border.

Annual Performance Goals and Performance Measures

Air Monitoring Networks

In 2000	Complete air monitoring networks for 3 of the 7 non-attainment areas along the US/Mexican border.
In 1999	Complete emissions inventories for 5 of the 7 non-attainment areas along the US/Mexican border.

Performance Measures	FY 1999	FY 2000
Number of non-attainment areas along the border with emission inventories	5 inventories	

Number of non-attainment areas along the border with air monitoring networks		3 areas
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Baseline: Seven non-attainment areas along the Mexico border.

U.S.-Mexico Border Water/Wastewater Infrastructure

In 2000	9 additional water/wastewater projects along the Mexican border will be certified for design-construction for a cumulative total of 34 projects.
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In 1999	1 additional water/wastewater projects along the Mexican border will be certified for design-construction.
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Performance Measures	FY 1999	FY 2000
Projects certified for design-construction along the Mexican Border	1 Projects	

Additional water/wastewater projects along the Mexican border certified for design/construction.		9 Projects
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Baseline: As of June 1998, a cumulative total of 24 Mexican border projects were either certified for design/construction or had received grants or IAGs.

Great Lakes: Ecosystem Assessment

In 2000	Assess and report on the state of key Great Lakes ecosystem components, report current status and trend information to Great Lakes environmental managers, and coordinate measurement of SOLEC environmental indicators applicable to the entire Great Lakes Basin.
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In 1999	Assess and report on the state of Great Lakes ecosystem components, make current status and trend information available to Great Lakes environmental managers, and coordinate measurement of SOLEC environmental indicators applicable to entire Great Lakes Basin.
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Performance Measures	FY 1999	FY 2000
Develop protocols for 5 of a proposed 15 GLNPO Monitoring Indexes, summarizing the prior year's data on select fish contaminants, atmospheric dep., limnology, biology, & sediments.	5 Protocols	

Model predictions for Lake Michigan for toxics reduction scenarios.		5 Predictions
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Reports on 9 of the proposed 12 GLNPO Monitoring Indexes, summarizing the prior year's data on select fish contaminants, atmospheric deposition, limnology, biology, and sediments.		9 Indexes
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Baseline: Although GLNPO has assessed and reported on Great Lakes conventional pollutants, toxics, air deposition, and ecosystem indicators and components (particularly plankton and fish contaminants) since the 1970's and 1980's, that data has not previously been routinely

Baseline(cont) summarized and reported. In FY2000, the Great Lakes program will establish a baseline using the FY1999 data; consequently, the current baseline is zero.

Great Lakes: Binational Toxics Strategy

In 2000 Documented reductions or progress which fulfills challenges under the Binational Toxics Strategy (BNS).

In 1999 Documented reductions or progress which fulfills challenges under the Binational Toxics Strategy (BNS).

Performance Measures	FY 1999	FY 2000
Catalog and publicize actions (partnerships or virtual elimination demonstration projects) toward reduction challenges under BNS.	3 Actions	
Great Lakes Projects initiated in support of toxics reduction	11 Projects	
Number of catalogued and publicized actions (partnerships or virtual elimination demonstration projects) initiated toward reduction challenges under BNS.		10 Actions
Completion and documentation of BNS analytical process for each of the Level 1 chemicals. Process includes info. gathering, analysis of reg. gaps, recommendations, & options for reductions		100 % Completion

Baseline: The Canada - U.S. Binational Toxics Strategy (BNS) was signed in 1997. The BNS Implementation Plan was developed and completed in 1998. Pursuant to the BNS challenge goals, three reports (octachlorostyrene, five cancelled pesticides, and alkyl-lead) will be completed by end of 1998. The baseline for actions toward BNS reduction is zero in 1997 (the date at signature of the Canada-U.S. BNS). 3 actions were initiated by FY99 and a cumulative total of 10 will be underway in the year 2000. In 1997, the BNS established challenge goals for mercury, octachlorostyrene, pesticides, alkyl-lead, PCBs, Dioxins, and HCB/B(a)P. At that time, a single report on mercury was substantially complete. Drafts of three reports (octachlorostyrene, pesticides, and alkyl-lead) have since been completed. Reports pertaining to the remaining challenge goals (PCBs, Dioxins, and HCB/BaP) are scheduled for FY2000.

Great Lakes: Contaminated Sediments

In 2000 Support state/community clean-up of contaminated sediments by sediment assessment and characterization(at sites in 1 new AOC, thus having visited 25 of 31 US AOCs) and by sediment cleanup demonstrations.

In 1999 Support state/community clean-up of contaminated sediment by sediment assessment/ characterization(at a site in 1 new AOC, thus having visited 24 of 31 US AOCs) and by sediment cleanup demonstrations

Performance Measures	FY 1999	FY 2000
Great Lakes sediment cleanup demonstrations completed		4 Demonstration
Assessments and characterizations at Great Lakes Areas of Concern	5 Assessments	5 Assessments

Performance Measures (continued)	FY 1999	FY 2000
Cumulative total (out of 5 started since 1996) of sediment cleanup demonstrations completed.	3 Cleanup demos	
Baseline:	By 1998, GLNPO has assisted Great Lakes communities in addressing contaminated sediments through assessments and characterizations at 21 Great Lakes Areas of Concern. In 1998, GLNPO completed 1 sediment site cleanup demonstration.	

Great Lakes: Habitat Protection

In 2000	Aquatic, wetland, riverine, and terrestrial habitat protection & restoration projects funded by GLNPO will impact an additional 6,000 acres.	
In 1999	Habitat protection and restoration proj will begin positive ecological impacts on 23% (cumulative) of the Basin's total land area. Ecolog. enhancements will occur at 5 of the 14 US terrestrial biodiversity investment areas. Biodiversity investment areas will be identified for coastal wetlands/aquatic areas.	

Performance Measures	FY 1999	FY 2000
Projects and acreage ecologically enhanced in terrestrial biodiversity investment areas	6,000 Projects/Acres	
Aquatic, wetland, riverine, and terrestrial habitat projects funded by GLNPO.		5 Projects
Aquatic, wetland, riverine, and terrestrial habitat acres impacted by GLNPO habitat protection and restoration projects.		6,000 Acres
Set of quantifiable targets for ecological enhancement in aquatic biodiversity investment areas.	1 Set	

Baseline:	Baseline for projects: GLNPO funded 20 habitat protection and restoration projects in 1997, bringing the total number of projects funded since 1992 to 109 and the cumulative number of acres impacted to more than 18 million acres. The positive ecological impacts on Great Lakes ecosystem, including the number of projects and acreage, will be assessed in 1999. Baseline for acres: beginning with a baseline of zero projects and acreage in 1992, the Great Lakes National Program Office has since funded 109 projects which, according to grantee reports through 1997, are beginning to have a cumulative positive impact on more than 18 million acres (out of a total of 136 million acres of land and nearshore waters in the Great Lakes ecosystem). "Positive ecological impact" means measures are implemented to protect ecological communities and biodiversity or steps are taken to restore ecological functions and processes.	
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Marine and Polar Environments

In 1999	Complete construction of prototype for transportable containment system for spent & damaged nuclear fuel from decommissioned Russian submarines;start	
In 2000	Complete testing and certification of a prototype 40 ton spent nuclear fuel storage cask for use in NW Russia that meets international guidelines and internal Russian Federation standards.	

Performance Measures

Complete construction of cask containment system prototype

FY 1999

9/30/99/Report

FY 2000

A prototype spent nuclear fuel storage cask is certified for use in Russia by Russian Federation Nuclear and Environmental Authorities.

9/30/2000 Certification

Baseline: Development of two spent nuclear fuel casks.

Verification and Validation of Performance Measures

Data on the effective functioning of the Mexico Border Infrastructure Program are collected via quarterly reports from EPA Regions 6 and 9.

Performance measures for the Great Lakes program are derived from open lake measurements taken by GLNPO and from annual programmatic analysis of activities pursuant to the Great Lakes Water Quality Agreement, the Binational Toxics Strategy, and the GLNPO programs for information management, sediments, and habitat. Individual projects which generate data are required to comply with the Agency's standards for quality assurance and control. LMMB project data is entered into the Great Lakes Environmental Monitoring Database (GLEND). A QA/QC tracking system is in place to ensure that QA/QC requirements are part of all applicable GLNPO projects. GLNPO uses its annual planning process as a check on indirect performance measures such as improved planning, coordination and communication. The GLNPO performance measures are written into Great Lakes State Environmental Performance Partnership Agreements as commitments. GLNPO provides the states with assessments of progress against those commitments. Under the GLNPO structure, each of the GLNPO programs conducts an end of year review of its progress regarding identified measures and activities, draws conclusions, and makes recommendations to management regarding the subsequent year's activities and measures. Management ultimately determines what the activities and measures will be for the succeeding year.

Coordination with Other AgenciesMexican Border - BECC, NADBank, IBWC

Over the last several years, US EPA has continued to work with the US and Mexican Sections of the International Boundary and Water Commission to further our efforts to improve water and wastewater services to communities within 100 km of the US - Mexico Border. Recently, the IBWC and US EPA have been involved in joint efforts to plan, design and construct six water and wastewater facilities in the Border region.

The Governments of Mexico and the United States agreed, in November 1993, on arrangements to assist communities on both sides of the border in coordinating and carrying out environmental infrastructure projects. The new agreement furthers the goals of the North American Free Trade Agreement and the North American Agreement on Environmental Cooperation.

To this purpose, the governments established two international institutions: 1. Border Environment Cooperation Commission (BECC), with headquarters in Ciudad Juarez, Chihuahua, México, to assist local communities and other sponsors in developing and implementing environmental infrastructure projects, and to certify projects for North American Development Bank financing; and 2. North American Development Bank (NADBank), with headquarters in San Antonio, Texas, capitalized in equal shares by the United States and Mexico, with an authorized capital of \$3,000 million dollars, to provide new financing to supplement existing sources of funds and foster the expanded participation of private capital. Currently, US EPA has placed \$170 million of its Border grant funds (Border Environmental Infrastructure Fund, BEIF) with the NADBank.

Great Lakes

Pursuant to the mandate in Section 118 of the Clean Water Act to Acoordinate action of the Agency with the actions of other Federal agencies and State and local authorities...,@ GLNPO is engaged in extensive coordination efforts with State, Tribal, and other Federal agencies, as well as with our counterparts in Canada. In 1991, EPA joined States and Federal agencies that have stewardship responsibilities for the Lakes in developing a shared five year strategy. In addition to the eight Great Lakes States, partners to the plan include the Army Corps of Engineers (Corps), the Coast Guard, the Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration (NOAA), and the Natural Resources Conservation Service (NRCS). The strategy joins environmental protection agencies with natural resource agencies in pursuit of common goals. These partners envision updates that will keep the strategy a current, action-forcing document that targets different problems in succession. These same organizations and the Great Lakes Tribes also meet at GLNPO's annual Great Lakes Planning Meeting to plan and prioritize near term activities. GLNPO monitoring involves extensive coordination among these partners, both in terms of running the monitoring program, and in utilizing results from the monitoring to manage environmental programs. GLNPO's sediments program works closely with the States and the Corps regarding dredging issues. Implementation of the Binational Toxics Strategy involves extensive coordination with Great Lakes States. GLNPO works closely with States, Tribes, FWS, and NRCS in addressing habitat issues in the Great Lakes. GLNPO also coordinates with these partners regarding development and implementation of Lakewide Management Plans for each of the Great Lakes and for Remedial Action Plans for the 31 US/binational Areas of Concern.

Statutory Authorities

Clean Water Act
Clean Air Act
Toxic Substances Control Act
Resource Conservation and Recovery Act
Pollution Prevention Act
North American Free Trade Agreement
1997 Canada-U.S. Great Lakes Binational Toxics Strategy
1996 Habitat Agenda
1990 Great Lakes Critical Programs Act
1987 Great Lakes Water Quality Agreement

1987 Montreal Protocol on Ozone Depleting Substances
1978 Great Lakes Water Quality Agreement (GLWQA)
1909 The Boundary Waters Treaty

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Reduction of Global and Cross-border Environmental Risk

Objective # 2: Climate Change

By 2000 and beyond, U.S. greenhouse gas emissions will be reduced to levels consistent with international commitments agreed upon under the Framework Convention on Climate Change and ratified by the United States, building on initial accomplishments under the Climate Change Action Plan.

Resource Summary

(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Climate Change	\$232,960.4	\$127,968.9	\$242,765.0	\$114,796.1
Environmental Program & Management	\$163,237.5	\$74,347.9	\$170,025.9	\$95,678.0
Science & Technology	\$69,722.9	\$53,621.0	\$72,739.1	\$19,118.1
Total Workyears:	333.9	324.3	325.7	1.4

Key Programs

(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Climate Change Technology Initiative: Buildings	\$78,100.0	\$38,800.0	\$80,100.0
Climate Change Technology Initiative: Transportation	\$58,900.0	\$31,750.0	\$61,900.0
Climate Change Technology Initiative: Industry	\$51,600.0	\$18,600.0	\$55,600.0
Climate Change Technology Initiative: Carbon Removal	\$3,400.0	\$0.0	\$3,400.0
Climate Change Technology Initiative: State and Local Climate	\$5,000.0	\$2,900.0	\$5,000.0
International Capacity Building	\$8,400.0	\$7,400.0	\$10,400.0

Climate Change Research	\$22,817.4	\$16,670.5	\$22,833.6
Partnership with Industrial and Other Countries	\$160.0	\$409.1	\$428.2
CCTI: RESEARCH	\$0.0	\$10,000.0	\$0.0

FY 2000 Request

EPA is meeting the United States' climate change objectives by working in partnership with business and other sectors to deliver multiple benefits – from cleaner air to lower energy bills – while improving overall scientific understanding of climate change and its potential consequences. In 2000, EPA expects to continue expanding on the significant accomplishments of its Climate Change programs to date.

Through 1998, EPA's Climate Change programs have reduced U.S. greenhouse gas emissions by 260 million tons of carbon dioxide equivalent (70 million metric tons of carbon equivalent). EPA's programs are reducing emissions of carbon dioxide as well as a number of other long-lived, high global warming potential (GWP) greenhouse gases such as methane and perfluorocarbons. EPA's climate technology programs have saved families and businesses over \$6 billion on their energy bills and kept over 150,000 tons of smog-forming nitrogen oxide (NO_x) pollution from entering the air. In 1998, these programs:

- Conserved enough energy to light 35 million homes for the year.
- Prevented NO_x emissions equivalent to the annual pollution from 46 powerplants.
- Avoided greenhouse gas emissions equivalent to taking 23 million cars off the road for the year.

Technology partnership programs do **not** provide subsidies: they work by overcoming widely acknowledged barriers to energy efficiency – lack of clear, reliable information on technology opportunities; lack of awareness of energy efficient products and services; and lack of financing options to turn life cycle energy savings into initial cost savings for consumers. EPA is working with:

- Manufacturers to make more energy-efficient products available that reduce energy consumption without sacrificing product performance. For example, in 1998, EPA formed a new partnership with TV and VCR manufacturers to produce TVs and VCRs that waste less energy, reduce pollution by more than 3.5 million tons of carbon dioxide per year and save consumers up to \$500 million per year on their energy bills.
- Schools to bring superior quality lighting and comfort into classrooms with large reductions in energy bills. Since 1995, EPA's programs have helped schools and universities save over \$200 million -- enough money to buy 4 million text books or hire 4,000 teachers.

- Families to reduce their energy bills by up to \$400 per year with currently available home products that improve home comfort while protecting the environment.
- Home Builders to get over 5,000 new homes built 30 percent above model energy code, saving consumers \$400 per year and increasing the performance and comfort of the homes.
- Small Businesses to help lower their overhead through lower energy bills. In 1998, 1,600 small businesses were working with the Energy Star Small Business program to realize savings on their energy bills. Nearly half of *Climate Wise* Industrial Partners have fewer than 100 employees. All are receiving technical assistance, and many have documented improvements in both energy efficiency and increases in productivity.
- Large Businesses and Organizations to protect the environment and improve productivity through their investments in advanced technologies. For example, in the Wisconsin headquarters building of West Bend Mutual Insurance, efficient building design has been documented to save about \$125,000 per year on utility bills and has also been credited with improved employee productivity on the order of \$260,000 per year.
- Building Owners to offer a benchmarking tool that will allow them to recognize and identify, with the ENERGY STAR label, the most efficient 25 percent of commercial building stock. Through the ENERGY STAR Buildings label, all buildings, new and old, will have the opportunity to save energy, save money, increase asset value and prevent pollution. In 1998, owners of the Empire State Building, the Sears Tower, the World Trade Center, and other landmark buildings from around the country joined with EPA to be charter applicants for the ENERGY STAR label.
- Large Industries to improve energy efficiency and enhance productivity through comprehensive Action Plans developed under EPA's *Climate Wise* program. In 1998, Climate Wise Partners identified more than 2,500 actions to improve efficiency and prevent pollution. These actions are expected to reduce emissions by nearly 10 million metric tons of carbon dioxide equivalent and save \$400 million. EPA has also been working with industry to reduce emissions of high global warming potential (GWP) gases such as PFCs and hydrofluorocarbons (HFCs), to achieve reductions in excess of 18 million metric tons of carbon dioxide equivalent annually in 1998.
- WasteWi\$e Partners (over 800 in 1998) with an emphasis on sector-specific, targeted technical assistance on waste reduction efforts leading to energy savings, reduced methane emissions, and increased carbon sequestration. Stakeholder meetings are being held with commodity trade associations (e.g., American Forest & Paper Association, American Plastics Council, Paper Recycling Coalition, etc.) in order to form new waste reduction and recycling initiatives.
- Financiers to make mortgages and loans with special terms for energy-efficient products widely available to consumers. The big names on Wall Street as well as smaller financial institutions are seeing the value of promoting energy efficiency. In 1998 five national lenders, including

GE Capital, Household Finance, and Chase Manhattan, and over seven regional lenders offered ENERGY STAR loans and mortgages to purchasers of ENERGY STAR heating and cooling equipment and homes.

- State and Local Governments to identify measures that save energy and reduce pollution and facilitate sharing of information and technologies. Local governments participating in the Cities for Climate Protection (54 in 1998) have implemented building, transportation, waste efficiency, and renewable projects resulting in the elimination of over 3 million metric tons of carbon dioxide. State governments such as New Jersey have broken new ground through their innovative work. New Jersey established a state carbon bank program to help meet its Department of Environmental Protection's goal of reducing New Jersey's greenhouse gas emissions 3.5 percent below 1990 levels by 2005.
- The International Community to adopt commitments and carry out actions that reduce greenhouse gases, expand markets for clean U.S. technologies, and establish markets for avoided emissions and sequestration. Activities will build technical consensus on issues vital to U.S. interests, such as cost reduction through flexibility mechanisms and credits for carbon sequestration, and motivate developing countries to commit to GHG mitigation, for example by assessing the local health and economic benefits of actions.
- Land owners and farmers, in close conjunction with the Department of Agriculture (USDA), to provide the incentives to increase carbon storage on U.S. lands while improving soil quality, reducing soil erosion, and enhancing other environmental and conservation goals.

Despite the significant accomplishments of EPA's programs to date, there remain large opportunities to achieve further pollution reductions and energy bill savings from energy efficiency programs and greater use of cost-effective renewable energy. In the U.S., energy consumption causes more than 85 percent of the emissions of major air pollutants such as NO_x, sulfur dioxide (SO₂), and carbon dioxide. At the same time, American families and businesses spend over \$500 billion each year on energy bills – more than we spend on education. Technologies are available that can cut this energy use significantly today. Other technologies are being developed that may provide even more dramatic opportunities -- such as a car that can reduce fuel use and greenhouse gas emissions by 2/3 without sacrificing safety and performance. In 2000, EPA's programs will continue to capitalize on these opportunities and will deliver 213 million metric tons in annual carbon dioxide equivalent reductions (58 MMTCE) and over \$8 billion in energy savings.

Technology deployment programs have demonstrated their effectiveness. For every dollar spent by EPA, these programs have reduced greenhouse gas emissions by 2.5 tons of carbon dioxide equivalent and delivered \$70 in energy bill savings. Because much of EPA's work to date has been devoted to program design and start up, the effectiveness of EPA's climate programs can be expected to improve substantially over the next several years. Over the next decade there are important opportunities to reduce local air pollution and make progress on controlling U.S. greenhouse gas emissions. By 2010, two-thirds of greenhouse gas pollution will be caused by equipment that is purchased over the next decade, equipment that can be made to pollute less and be more energy

efficient. EPA's programs are designed to help businesses and consumers make better investments when they purchase technology, capitalizing on economic opportunities to reduce air pollution.

- Buildings Sector -- The Buildings Sector, which includes both homes and commercial buildings, offers a large potential for carbon reductions using technologies that are on the shelf today. Consumers and businesses continue to invest substantial resources in equipment that is relatively inefficient, resulting in higher energy bills and higher pollution levels. The Buildings Sector represents one of EPA's largest areas of investments, and one of its most successful.

EPA's ENERGY STAR Program is a critical component of transforming the market for energy efficiency. EPA will continue to provide clear, technically accurate, and reliable information to consumers and businesses on how to purchase products. EPA's success with the ENERGY STAR label will continue to grow as EPA adds products to the list of products that qualify for the label. Products identified with the ENERGY STAR label are substantially reducing greenhouse gas emissions.

EPA's ENERGY STAR Buildings & Green Lights Partnership is successfully laying the foundation for market transformation in the commercial buildings sector. EPA will expand its partnerships with equipment manufacturers and building owners in order to provide reliable, easily understood information to a greater segment of the residential and commercial markets. EPA will continue work to support other Federal agencies in improving the energy performance of their facilities, and to support state and local governments in their efforts to reduce greenhouse gas emissions.

EPA supports the Department of Energy (DOE) and the *Million Solar Roofs Initiative* by working with partners to use renewable energy applications where cost-effective. Emissions reductions from this initiative will exceed 29 million tons of carbon dioxide equivalent annually by 2010.

- Industry Initiatives -- The President has invited entire industries to work with the Federal government to take actions to meet voluntary reduction targets. EPA is working with key energy intensive industries, such as cement, chemicals, steel, petroleum, airlines, and food processing. The focus of this effort is to: 1) inventory current greenhouse gas emission sources and reduction options; 2) establish a specific reduction goal or target; 3) develop an action plan for meeting the identified target; and 4) identify and remove barriers to reducing greenhouse gas emissions in that sector. EPA provides assistance in establishing baselines and assessing progress toward the attainment of the sector emission targets. EPA also provides technical assistance tools such as project tracking software and emission projection models.

EPA's Climate Wise Program is a partnership initiative designed to stimulate the voluntary reduction of greenhouse gas emissions among participating manufacturing companies by providing technical assistance and allowing organizations to identify the most cost-effective ways to reduce greenhouse gas emissions. As part of the *Climate Wise* program, companies submit an Action Plan within six months of joining. Action Plans detail ways to reduce

greenhouse gas emissions by implementing energy efficiency and environmental management practices. Companies quantify energy savings and emission reduction numbers. The *Climate Wise Program* works with individual partner companies that now represent nearly 12 percent of U.S. energy use and more than 15 percent of U.S. manufacturing energy use.

EPA's WasteWi\$e Program will continue to work with its partner base (over 800 in 1998) with an emphasis on sector-specific, targeted technical assistance on waste reduction efforts leading to energy savings, reduced methane emissions, and increased carbon sequestration. WasteWi\$e will build upon FY99 efforts, where selected partners will be engaged in a stakeholder dialogue in an effort to help partners understand and communicate the climate benefits of their waste reduction activities. Activity tracking and emission reduction calculation tools will be used to support voluntary reporting of greenhouse gas emission reductions. The climate benefits of increased technical assistance to WasteWi\$e partners and support of State and local waste reduction initiatives will exceed 5.0 million metric tons of carbon in the year 2000. In addition, an expansion of outreach and training activities on waste management to the international arena will support efforts to demonstrate meaningful participation from developing countries on climate change.

EPA's programs to reduce high GWP gases, including methane, HFCs, PFCs, and (SF₆), are delivering significant cost-effective reductions. In 1998 alone these programs eliminated the emissions of over 56 million tons of carbon dioxide equivalent (15.5 MMTCE). Continued expansion of these partnerships will increase greenhouse gas reductions in the coming years.

- Transportation Initiatives -- The Partnership for a New Generation of Vehicles (PNGV) is a public/private partnership between the U.S. government (seven agencies and 20 Federal laboratories) and Chrysler, Ford, and General Motors that aims to strengthen America's competitiveness by developing technologies for a new generation of vehicles. Announced at the White House on September 29, 1993 by President Clinton, Vice President Gore, and the Chief Executive Officers of the domestic auto makers, this government/industry program includes support for over 350 automotive suppliers, universities, and small businesses. PNGV's long term goal, the "Clean Car" goal, is to develop an environmentally friendly car with up to triple the fuel efficiency of today's mid-size cars without sacrificing affordability, performance, or safety. The National Academy of Sciences (NAS) has determined that EPA's renewable fuels application for 4-Stroke Direct Injection (4-SDI) engines is the lead candidate technology. When complete, EPA's design will provide the basis for a viable and proven concept vehicle for commercialization and for innovation to conventional vehicles. It will also provide a strong technical base from which to initiate additional EPA research into similar technologies for light- and heavy-duty truck applications.

Transportation (cars, trucks, aircraft, marine) accounts for almost one third of U.S. carbon dioxide emissions and represents one of the fastest-growing sectors for greenhouse emissions. The Agency will increase support for implementing a National Voluntary Commuter Choice/Parking Cashout Initiative that highlights changes in Federal tax laws which provide new incentives for commuters to consider transit, ridesharing, and other transportation alternatives to driving through 'parking cashout' and the ability to use pre-tax earnings to pay

for commuting expenses, such as transit passes. EPA will continue its work to support innovative state and local efforts that encourage “livable communities and smart growth”-- compact, walkable, transit-friendly, and mixed-use development-- while reducing the growth in vehicle travel, emissions, and congestion and will expand its public information campaign to describe how transportation choices and consumers impact air quality, traffic congestion, and climate change.

Transportation Partners includes a network of over 340 companies, community organizations and local governments to implement vehicle miles traveled (VMT) reduction strategies. By 2000, we anticipate that this network will have grown to include over 500 partners throughout the country and will be reducing 13 million tons of carbon dioxide equivalent annually.

- International Capacity Building – Greenhouse gas emissions from developing countries already constitute more than half of the global total and are growing rapidly. EPA is working with other agencies to secure meaningful participation from key developing country parties building on the success of the U.S. Country Studies Program. Eight of the 10 national reports so far submitted to the Climate Change Convention Secretariat by developing countries have come from Country Studies Program partners.
- State and Local Climate Change Program -- State and local governments have a significant role and home-court advantage in the reduction of greenhouse gases, provided they are equipped with the tools they need to integrate climate change into their daily decisions. With assistance from EPA’s State and Local Climate Change Program, 35 states have initiated and 32 states have completed state greenhouse gas emission inventories while 26 states have initiated and 12 have completed greenhouse gas emission reduction strategies. Five of the state plans alone have identified strategies that could collectively reduce greenhouse gas emissions by 34 MMTCE, or 2% of U.S. 2010 emissions, while saving over \$600 million per year. In addition, 30 demonstration and education projects have been launched, and 54 cities and counties, representing 25 million people and 8% of US GHGs, have begun developing inventories and implementing plans, some already reducing over one million tons of carbon-equivalent each year.

Research

EPA’s research and assessment activities in this area will evaluate the potential regional consequences of climate change and climate variability for the United States. EPA will pay particular attention to the potential beneficial and detrimental consequences of climate variability and change for human health, ecosystems, and economic systems at the regional, state and local levels. EPA will also assess possible adaptation opportunities in order to reduce the risks, or take advantage of the opportunities, presented by climate variability and change.

The work planned for FY 2000 will directly support the objective through research and assessment activities that examine the potential effects of climate variability and change on: (1) human health (including the mortality and morbidity effects of heat stress; effects of climate change on air and water quality and the consequent health effects; the spread of infectious diseases; the health

consequences of extreme events such as floods, droughts and hurricanes; and changes in nutrition due to effects on agriculture and food distribution); (2) air quality (including changes in concentrations of ozone and particulate matter), and the ability of urban areas to attain air quality standards; (3) water quantity and quality; (4) ecosystem health (particularly wildlife and biodiversity in both terrestrial and aquatic ecosystems; unique ecosystems; National Parks; and effects on ecosystem services of high societal value); (5) the frequency, intensity, and socioeconomic impacts of extreme weather events; (6) agricultural productivity and food availability (including changes in the distribution of production across different regions of the country); and (7) forest health (including consequences for commercial timber and recreational activities).

The Agency will assess all of these climate-induced changes in the context of multiple stressors; that is, climate change will be viewed as one of many stressors. For example, we will assess the synergistic effects of climate change and UV-B exposure on human health and ecosystems. We will also develop indicators of change. The development of sensitive and accurate indicators of ecological and human health impacts in response to climate change, climate variability, and other stressors will support ongoing monitoring of change and the development of appropriate adaptive responses to change.

These research and assessment activities will also evaluate the potential co-control benefits of greenhouse gas mitigation policies and the potential co-control benefits of policies to reduce criteria air pollutants. For example, do efforts to reduce greenhouse gas emissions lead to changes in criteria air and water pollutants, and, do efforts to reduce air pollutants lead to changes in greenhouse gas emissions? In addition, we will assess the consequences for human health and welfare of the changes in criteria air pollutants, water pollutants, and greenhouse gases.

EPA's Global Change Research Program is integral to the U.S. National Assessment Process of the U.S. Global Change Research Program (USGCRP), which is evaluating the potential consequences of climate change and variability to the United States. The USGCRP coordinates the global change research efforts of multiple government agencies. Research under this objective will continue to support specific regional assessments (*e.g.*, Mid-Atlantic, Great Lakes, and Gulf Coast regions) and sectoral assessments (*e.g.*, human health sector) of the potential impacts of climate change and variability. These assessments will be conducted through a public-private partnership that actively engages researchers from the academic community, decision makers and resource managers, and other affected stakeholders in the assessment process.

The regional assessment activities will continue to focus on four key questions in order to provide useful insights to decision makers, resource managers, and other affected stakeholders: (1) What are the current conditions of resources in a particular region or sector, and what are the stressors on those resources other than climate variability and change? (2) How might climate variability and change exacerbate or ameliorate future conditions? (3) What adaptive opportunities exist to reduce the risks, or to take advantage of the opportunities, presented by climate variability and change (particularly with respect to air quality, water quality, and ecosystem health)? (4) What are the key, policy-relevant knowledge gaps upon which future global change research should focus?

Annual Performance Goals and Performance Measures

Reduce Greenhouse Emissions

- In 2000 Greenhouse gas emissions will be reduced from projected levels by more than 50 million metric ton carbon equivalent per year through EPA partnerships with businesses, schools, State and local governments, and other organizations. Reduction level will increase 10 million metric tons over 1999.
- In 1999 Reduce U.S. greenhouse gas emissions by 35 million metric ton carbon equivalent (MMTCE) per year through partnerships with businesses, schools, state and local governments, and other organizations.

Performance Measures	FY 1999	FY 2000
Methane Programs - Annual Greenhouse Gas Reductions	8.5 MMTCE	
HFC/PFC Programs - Annual Greenhouse Gas Reductions	11.5 MMTCE	
Annual Greenhouse Gas Reductions - All EPA Programs	35 MMTCE	50 MMTCE
ENERGY STAR Buildings and Green Lights - Annual Greenhouse Gas Reductions	3.9 MMTCE	
ENERGY STAR Labeled Products - Annual Greenhouse Gas Reductions	4.8 MMTCE	

Baseline: Performance Baseline: The baseline for evaluating program performance is a forecast of U.S. greenhouse gas emissions in the absence of the Climate Change Action Plan programs. The baseline was developed as part of an interagency evaluation of the Climate Change Action Plan in 1997, which built on a similar baseline forecast that was developed in 1993 for the Climate Change Action Plan. The updated baseline includes updated energy forecasts and economic growth projections. The baseline is discussed at length in the Climate Action Report 1997, which includes a discussion of differences in baselines between the original Climate Change Action Plan and the 1997 baseline update.

Reduce Energy Consumption

- In 2000 Reduce energy consumption from projected levels by more than 60 billion kilowatt hours, resulting in over \$8 billion in energy savings to consumers and businesses that participate in EPA's climate change programs. Increase of 15 billion kilowatt hours & \$5 million in annual energy savings over 1999.
- In 1999 Reduce U.S. energy consumption by over 45 billion kilowatt hours per year, including annual energy bill savings to consumers and businesses of over \$3 billion. Encourage more widespread adoption of low greenhouse gas emitting technologies.

Performance Measures	FY 1999	FY 2000
Green Programs - Annual Energy Savings	47 Billion kWh	60 Billion kWh

Baseline: Baseline under development.

Technology for 70 mpg sedan

In 2000 Demonstrate technology for a 70 mpg mid-size family sedan that has low emissions and is safe, practical, and affordable.

In 1999 Demonstrate that an American family car can attain over 60 miles per gallon on the Federal Test Procedure without loss in utility, safety, and emissions control performance.

Performance Measures

Fuel Efficiency of EPA-Developed PNGV Concept Vehicle over EPA Driving Cycles Tested

FY 1999

FY 2000

70 mpg

PNGV MPG Demonstration

60 MPG

Baseline: Performance Baseline: Fuel economy average miles per gallon.

Analysis, Assessment and Reporting Support

In 2000 Provide analysis, assessment, and reporting support to Administration officials, the Intergovernmental Panel on Climate Change, and the Framework Convention on Climate Change.

Performance Measures

GHG Inventory (FCCC)

FY 1999

FY 2000

1999 Inventory

Baseline: EPA will continue to fulfill analytical, assessment, and reporting commitments under the FCCC

Research

Global Change Research - Global Scale

In 2000 Assess the consequences of global change and climate variability at a regional scale.

In 1999 Conduct preliminary assessment of consequences of climate change at three geographical locations: (Mid-Atlantic, Gulf Coast, and upper Great Lakes).

Performance Measures

Determine impacts of global change on coastal ecosystems in the Gulf Coast and Mid-Atlantic

FY 1999

FY 2000

09/30/2000

Complete 3 regional assessments of potential consequences of global change & climate variability for the USGCRP National Assessment. The 3 regions are the Mid-Atlantic, Great Lakes, & Gulf Coast

3 reg. assessment

Conduct preliminary assessment of regional scale consequence climate change at three geographic locations (Mid-Atlantic, Gulf Coast, and upper Great Lakes).

09/30/1999

Baseline: The regional scale focus is an advance beyond the existing national-level assessments of the aggregate impacts of climate change on the United States by accounting for the potential regional impacts. Climate variability itself is accounted for, whereas previous assessments only focused on changes in average climate.

Global Change Research - Human Health

In 2000 Assess the consequences of global change and climate variability on human health.

In 2000 Provide the capability to assess ecological and associated human health vulnerability to climate-induced stressors at the regional scale and assess mitigation and adaptation strategies.

Performance Measures	FY 1999	FY 2000
Complete a Health Sector Assessment of the potential consequences of climate change and variability for public health, for the USGCRP National Assessment process.		1 assessment
Provide preliminary results from a case study which will determine how climate change & variability affect the formation of trop. ozone in a city & consider the viability of certain adaptation options		09/30/2000 results
Develop prototype ecological and health data and information system to integrate with the Global Climate Data and Information System (GCDIS).		1 info. system

Baseline: Performance Baseline: Uncertainties remain concerning the positive or negative consequences of climate change and variability on human health. Development of "formal" baseline information for EPA research is currently underway.

Global Change Research - Ecosystem Services

In 2000 Assess the impact of global change on ecosystem services.

Performance Measures	FY 1999	FY 2000
Assess potential effects of global change on ecosystem services.		09/30/2000

Baseline: Performance Baseline: Uncertainties remain concerning the impact of climate change on ecosystem services such as water and air purification, carbon and nitrogen fixing, and erosion prevention. Development of "formal" baseline information for EPA research is currently underway.

Global Change Research - Human Dimensions

In 2000 Assess the human dimensions of Global Change.

Performance Measures	FY 1999	FY 2000
New research based on an FY99 solicitation will focus on the human dimensions of global change. The focus will be to identify, understand, & analyze how human activities contribute to changes in natural systems.		1 grant

Baseline: Performance Baseline: Research needs to be done to link scientific studies of climate change with socio-economic causes and effects, and possible mitigation and adaptation activities. Development of "formal" baseline information for EPA research is currently underway.

FY 2000 Change from FY 1999 Enacted

EPA is requesting a \$107 million increase in funding for its climate technology programs in order to target additional opportunities throughout all sectors of the economy. The request is part of the President's five-year Climate Change Technology Initiative announced in the FY 1999 Budget. Over the next decade, the increase in funding for EPA will deliver at least:

- ▶ 1.3 billion tons of greenhouse gas emissions (carbon dioxide equivalent)
- ▶ \$35 billion in energy savings to families and businesses
- ▶ 850,000 tons of NO_x emissions.

Both technology deployment and technology research and development are essential elements of a balanced strategy to address climate change in both the near-term and the long-term. Technology deployment is particularly key in both the buildings and industrial sectors where by 2010, two-thirds of greenhouse gas pollution will be caused by equipment that is purchased over the next decade. EPA's strategy to achieve these benefits is to expand its existing programs where additional benefits can be achieved at a profit to businesses and consumers and to launch new initiatives targeted at areas of opportunity that EPA has not addressed:

- ▶ (+\$37,000,000 EPM) Industry Initiatives -- By 2000, EPA's programs in the industrial sector will reduce greenhouse gas emissions by 140 million tons of carbon dioxide equivalent (37.9 MMTCE) annually. Fully funded, EPA will expand existing programs as well as introduce new initiatives working with American business to achieve the goal of doubling the rate of energy efficiency investments in industry between now and 2010. Combined with partnerships to reduce the emissions of potent gases such as methane and HFCs, these industrial partnerships have the potential to reduce U.S. emissions by 513 million tons of carbon dioxide (140 MMTCE) by 2010.

EPA will continue to work with key energy intensive industries to take actions to meet voluntary reduction targets. In 2000, EPA will expand its work with these industries to build a program that provides appropriate credit for early action.

EPA's Climate Wise Program will use increased funding to expand work with individual partner companies to achieve reductions of nearly 17 million tons of greenhouse gas emissions (carbon dioxide equivalent) per year by the year 2000. By expanding work *Climate Wise* partners will comprise half of the cement, pharmaceuticals, food processing and steel industries in the year 2000. *Climate Wise* will work with the private sector to develop and create a market for products whose emissions have been offset or neutralized through energy efficiency, use of renewable power, carbon sequestration, or energy efficient projects conducted at local schools or other municipal centers. *Climate Wise* is also working with key

partners to make the purchase or generation of renewable power a key element of their Action Plans over the next five years.

A combined heat and power initiative will reduce carbon emissions by 146 million tons of greenhouse gas emissions (carbon dioxide equivalent) by 2010—the equivalent of eliminating 40 million cars from U.S. roadways -- by doubling the capacity of U.S. combined heat and power systems employed by commercial, industrial, and institutional buildings, and in communities throughout the U.S. EPA, working with DOE, will identify and eliminate the regulatory and institutional barriers that are currently preventing more rapid dissemination of this technology.

EPA will expand its programs to reduce high GWP gases, including methane, HFCs, PFCs, and SF₆, to deliver cost-effective greenhouse gas emissions. For example, EPA will further expand the partnership with the magnesium industry to reduce the emissions of SF₆. In 2000, EPA will bring the total number of partnerships with the magnesium industry up to 13 partners, representing all of primary U.S. production and about half of U.S. diecasting industry. EPA will also secure SF₆ emissions reductions in the Electric Power sector by adding 15 new partnerships in 2000 to the SF₆ Electric Power System Voluntary Partnership launched in 1998. The Voluntary Aluminum Industrial Partnership (VAIP) will continue to deliver reductions and by the year 2000, VAIP participants will reduce the industry's emissions of PFCs by an estimated 45 percent.

- ▶ (+\$7,200,000 EPM, +\$23,000,000 S&T) Transportation Initiatives -- With increased funding, EPA will accelerate its efforts to reduce greenhouse gas emissions from the transportation sector. Transportation Efficiency Systems expects reductions of 2.1 MMTCE of emissions for 2000. This increase will enable EPA to greatly accelerate the PNGV and expand the process to trucks. EPA will accelerate its program to develop an optimized renewable alcohol-fueled engine that can simultaneously achieve high efficiency and low carbon, particulate, and NO_x levels. EPA also will help initiate and participate in the development of a new generation of heavy truck production vehicles, to transfer PNGV technology to petroleum fuels, and to initiate work to design and build a combined-cycle demonstration engine.

Increased funding will allow EPA to expand its work with state and local decision-makers to develop and implement transportation improvements that reduce the growth in vehicle travel, emissions, and congestion. EPA's *Transportation Partners Program* will continue to expand its existing network of over 340 companies, community organizations, and local governments to implement VMT reduction strategies. By 2000, we anticipate that this network will have grown to include over 500 partners throughout the country and will be reducing 13 million tons of carbon dioxide equivalent (3.6 MMTCE) annually in the year 2000. EPA will also work with the *Climate Wise Program* to implement Commuter Choice programs with corporations nationwide. Using strategies such as transit incentives, bicyclist support facilities, and parking cash-out, *Transportation Partners* will assist companies in reducing in reducing their employees' commute burden. *Transportation Partners* and *Climate Wise* will also assist corporations in examining opportunities for emissions reductions through corporate

fleet management. The *Transportation Partners* network will be working with both national and local Partners to maximize the effectiveness of new transit programs and other Department of Transportation pilot programs, such as the Transportation and Community and System Preservation pilots. By engaging local decision-makers in planning and design projects, communities will foster a more transit-supportive environment, and contribute to increasing ridership.

- ▶ (+\$41,300,000 EPM) Buildings Initiatives. Building on the success of EPA's programs in the buildings sector (residential and commercial) will deliver emissions reductions of 46 million tons of greenhouse gas emissions (carbon dioxide equivalent) annually (12.7 MMTCE) in 2000. EPA is working toward the goal of improving the energy efficiency of one-half of all commercial buildings and homes by the year 2010. Expanding EPA's activities and achieving this goal would deliver reductions of about 256 million metric tons of carbon dioxide equivalent annually in 2010. It would also reduce the nation's energy bill by over \$30 billion per year.
- ▶ Fully funded, EPA will expand beyond its existing partnerships and support the launch of 25 new ENERGY STAR product lines. In commercial buildings, EPA will be able to expand beyond its existing partnerships and sign up 2,000 additional small business and school partners in 2000. The ENERGY STAR Buildings label, a critical benchmarking tool, will be rolled out for several commercial building types. This tool will continue to be developed to meet the needs of other buildings types and by the end of 2000, there will be several hundred ENERGY STAR labels on commercial buildings. EPA will also focus efforts to improve efficiency of Federal facilities.

As part of the Partnership for the Advancement of Technology in Housing (PATH) initiative, EPA will implement a nationwide ENERGY STAR Home Improvement program that will offer homeowners the tools that they need to upgrade their homes to a better comfort level with lower utility bills and less impact on the environment. Home owners can potentially reduce their energy bills by \$400 annually.

EPA will also support DOE and the Million Solar Roofs Initiative by working with partners to use renewable energy applications where cost-effective. The EPA will lead by example in installing and purchasing renewable energy where allowed under procurement rules. EPA will provide improved access to information on renewable energy, including peer-reviewed tools to households and businesses so that they may assess for themselves the environmental implications of energy products offered to them. Emissions reductions from this initiative will exceed 29 million tons of carbon dioxide equivalent annually by 2010.

- ▶ (+\$3,400,000 EPM) Carbon Removal. Providing funds for this activity will allow EPA to develop incentives to increase carbon storage on agricultural and forest lands while improving soil quality, reducing soil erosion, and enhancing other environmental and conservation goals.

EPA will continue efforts to fully account for carbon sequestration in the U.S. greenhouse gas inventory to enable these activities to receive credit internationally, and will accelerate efforts to promote the use of livestock-based fertilizer products and more efficient use of nutrients from all sources.

- ▶ (+\$3,000,000 EPM) International Capacity Building. In 2000, EPA will expand cooperation to an additional six key developing countries, with total greenhouse gas emissions of more than 1.6 billion metric tons in 1996. EPA's goal is to gain actions that reduce projected greenhouse gas levels in key countries by at least 5 percent by 2010 (or roughly 135 MMTCE avoided annually). General emphasis will be on: local environmental benefits of greenhouse gas mitigation and sequestration; financial benefits of participating in global greenhouse gas markets; economic opportunities in restructuring; improved access to clean technologies; and vulnerabilities to climate change. In addition, EPA will seek to improve international compliance systems and enforcement.
- ▶ (+\$2,100,000) State and Local Climate Change Program. In 2000, EPA will provide additional support to states and localities to help conduct analyses of the co-benefits of greenhouse gas mitigation, state carbon sequestration opportunities, and climate change policy impacts on state economies; implement and expand promising policy options identified by states in their greenhouse gas mitigation plans; and conduct regional assessments and state-level case studies of climate change impacts and adaptation options, and work with stakeholders to develop and implement adaptation measures to increase resilience to climate variability. Reductions of 1.7 MMTCE of emissions are expected for 2000.
- ▶ (-\$10,000,000) Funding is discontinued for Climate Change Technology Initiative activities funded through the FY 1999 Omnibus appropriation.

Research

S&T

- (+\$1,180,000) This increase in funding will be used to assess the potential effects of climate change on human health (e.g., changes in the presence of vector-borne and water-borne diseases), air quality (e.g., impacts of tropospheric ozone and PM), water quality (e.g., impact on water quality criteria), and ecosystem health (e.g., changes in the composition of landscapes; changes in ecosystem services).
- (+\$400,000) This increase in funding will be used to assess data collected through the UV-B monitoring network to ascertain potential effects on ecosystems.
- (+\$4,887,900) This increase in our Global Change Research Grants program will increase the number of global change assessment grants awarded. Solicitations will be issued for integrated assessments at the state and local level of the potential consequences of climate change on human health, ecosystems, and economic systems. Other grants will support work to assess data gathered through the UV-B monitoring network to examine the possible impacts of UV-B

exposure on ecosystems. Grants will also support research into the human dimensions of climate change. Human dimensions research entails understanding how humans contribute to and respond to global change.

- (+\$216,000 and +4 workyears) This request continues the second year of the Agency's Postdoctoral Initiative to enhance our intramural research program, building upon the overwhelmingly positive response by the academic community to EPA's announcement of 50 postdoctoral positions for 1999. These positions will provide a constant stream of highly-trained postdoctoral candidates who can apply state-of-the-science training to EPA research issues.

NOTE: The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

Coordination with Other Agencies

Agencies throughout the Administration will make significant contributions to the CCTI; EPA worked extensively with these other agencies in the development of the CCTI. For example, the DOE will pursue actions such as promoting the research, development, and deployment of advanced technologies (for example, renewable energy sources). The Treasury Department will administer proposed tax incentives for specific investments that will reduce emissions. EPA is expanding its public information transportation choices campaign as a joint effort with the Department of Transportation.

EPA has also worked extensively with the DOE and other Federal agencies and offices in evaluating the performance of voluntary climate programs, and coordinating performance measures for the year 2000. An interagency process, headed by the Council on Environmental Quality, evaluated the performance of each program and their targets for the year 2000. The results were published by the Department of State in the *Climate Action Report 1997*. EPA and DOE, which together manage a majority of the voluntary climate programs, continue to coordinate on performance measures for the year 2000.

Research

EPA is an active participant in the interagency U.S. Global Change Research Program (USGCRP) and the ongoing National Assessment of "The Potential Consequences of Climate Change and Variability on the United States." As part of these efforts, EPA coordinates research and assessment activities with other USGCRP agencies to ensure that an integrated federal research and assessment program is implemented, and that agencies' activities are complementary rather than duplicative.

Verification and Validation of Performance Measures

EPA has several strategies to validate and verify performance measures. At the national level, the primary mechanism for monitoring overall changes in greenhouse gas emissions is the annual greenhouse gas inventory that is developed by EPA in coordination with other government agencies and departments. The EPA greenhouse gas inventory serves as the official U.S. government submission to the United Nations.

Within the voluntary programs, EPA monitors and evaluates accomplishments based on extensive information provided by partners. For example, the Green Lights partners provide detailed information on investments and energy savings from over 14,000 completed energy-efficiency projects (e.g., the annual kilowatt-hour savings from completed lighting upgrades). These standardized reports on energy efficiency projects can be easily translated into annual emission reductions by applying the appropriate emission factor (lbs/kWh) for each pollutant of concern. The voluntary programs continually use the information collected to improve the program's performance and more accurately assess its future potential.

Another measure of progress for the voluntary programs is obtained by using the Voluntary Reporting of Greenhouse Gases Program developed by the Energy Information Agency under the 1992 Energy Policy which reports the results and achievements of individual companies. Through this program, companies submit reports directly to the Energy Information Agency, which reviews them for accuracy and to ensure plausibility.

Research

EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to these strategies is the performance of both peer reviews and quality reviews to ensure that requirements are met.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental science and research activities that the work meets peer expectations. Only those science activities and resulting information products that pass Agency peer review are addressed and published. This applies to program-level, project-level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

The Agency's expanded focus on peer review helps ensure that the performance measures listed here are verified and validated by an external organization. This is accomplished through the use of the Science Advisory Board (SAB) and the Board of Scientific Counselors (BOSC). The BOSC, established under the Federal Advisory Committee Act, provides an added measure of assurance by examining the way the Agency uses peer review, as well as the management of its research and development laboratories.

In 1998, the Agency presented a new Agency-wide quality system in Agency Order 5360.1/chg 1. This system provided policy to ensure that all environmental programs performed by or for the Agency be supported by individual quality systems that comply fully with the American National Standard, Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs (ANSI/ASQC E4-1994).

The order expanded the applicability of quality assurance and quality control to the design, construction, and operation by EPA organizations of environmental technology such as pollution control and abatement systems; treatment, storage, and disposal systems; and remediation systems. This rededication to quality provides the needed management and technical practices to assure that environmental data developed in research and used to support Agency decisions are of adequate quality and usability for their intended purpose.

A quality assurance system is implemented at all levels in the EPA research organization. The Agency-wide quality assurance system is a management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control activities applied to environmental programs conducted by or for EPA. This quality management system provides for identification of environmental programs for which Quality Assurance/Quality Control (QA/QC) is needed, specification of the quality of the data required from environmental programs, and provision of sufficient resources to assure that an adequate level of QA/QC is performed.

Agency measurements are based on the application of standard EPA and ASTM methodology as well as performance-based measurement systems. Non-standard methods are validated at the project level. Internal and external management system assessments report the efficacy of the management system for quality of the data and the final research results. The quality assurance annual report and work plan submitted by each organizational unit provides an accountable mechanism for quality activities. Continuous improvement in the quality system is accomplished through discussion and review of assessment results.

Statutory Authorities

Clean Air Act, 42 U.S.C. 7401 et seq. - Sections 102, 103, 104, 108

Clean Water Act, 33 U.S.C. 1251 et seq. - Section 104

Solid Waste Disposal Act, 42 U.S.C. 6901 et seq. - Section 8001

Pollution Prevention Act of 1990, 42 U.S.C. 13101 et seq. - Sections 6602, 6603, 6604, 6605

National Environmental Policy Act of 1969, 42 U.S.C. 4321 et seq. - Section 102

Global Climate Protection Act of 1987, 15 U.S.C. 2901 - Section 1103

Federal Technology Transfer Act, 15 U.S.C. - Section 3710a

Research

U.S. Global Change Research Program Act of 1990

United Nations Framework Convention on Climate Change

National Climate Program Act (1997)

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Reduction of Global and Cross-border Environmental Risk

Objective # 3: Stratospheric Ozone Depletion

By 2005, ozone concentrations in the stratosphere will have stopped declining and slowly begun the process of recovery.

Resource Summary

(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Stratospheric Ozone Depletion	\$26,914.3	\$17,033.8	\$27,046.5	\$10,012.7
Environmental Program & Management	\$26,914.3	\$17,033.8	\$27,046.5	\$10,012.7
Total Workyears:	34.4	36.9	36.9	0.0

Key Programs

(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Multilateral Fund	\$21,000.0	\$11,362.0	\$21,000.0
Partnership with Industrial and Other Countries	\$160.0	\$336.7	\$361.1
EMPACT	\$381.9	\$671.4	\$385.1

FY 2000 Request

The stratospheric ozone layer protects people and other living things from harmful ultraviolet (UV) rays. As the ozone layer depletes, people become more susceptible to the damaging effects of ultraviolet radiation from the sun. The increased levels of UV radiation due to ozone depletion are linked to higher incidences of skin cancer, cataracts, and other illnesses. The rate of malignant melanoma, the most fatal form of skin cancer, increased 4.3 percent per year from 1973 to 1990 and continued to increase 2.5 percent per year from 1990 to 1995, partially as a result of increased UV radiation exposure due to stratospheric ozone depletion. Restoring the stratospheric ozone layer will help reduce the incidence of certain health effects, including skin cancers of all types. Ozone layer

protection will also help reduce the incidence of cataracts, a leading cause of blindness worldwide, and will reduce UV-linked immune suppression. Increases in UV radiation from ozone depletion are also expected to reduce crop yields, diminish the productivity of the oceans, and possibly contribute to the decline of amphibious populations.

The United States and over 160 other countries are Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer. The Administration has repeatedly affirmed its commitment to honoring this international treaty and to demonstrating world leadership by phasing out domestic production of ozone-depleting substances (ODSs) as well as helping other less developed countries find suitable alternatives. As a signatory to the Montreal Protocol, the United States has a positive obligation to domestically regulate and enforce its terms. In accordance with this international treaty, EPA implements and enforces rules controlling the production and emission of ODSs and rules requiring EPA to identify safer alternatives and promote their use to curtail ozone depletion under the authority of Title VI of the Clean Air Act Amendments of 1990.

Because of the very long life times and stability of these ODSs, even after program goals are met, the public in the U.S. will be exposed to higher levels of radiation than existed prior to the use and emission of ODSs. The ozone layer is not expected to recover until the mid-21st century, according to current atmospheric research. Recognizing this, we are informing the public about the dangers of overexposure to UV radiation, so that we may further reduce risks attributable to ozone depletion during the period of recovery of the stratospheric ozone layer.

EPA's approach to achieving this objective focuses on six areas:

- Domestic and international production phaseout of five ODSs and chemical classes: chlorofluorocarbons (CFCs), halons, methyl chloroform, carbon tetrachloride and hydrobromofluorocarbons (HBFCs), as well as controls on their import.
- Implementation of limitations on two other ODSs, hydrochlorofluorocarbons (HCFCs) and methyl bromide.
- Identification and information dissemination related to safe alternatives for compounds being phased out.
- More intensive recycling programs in the U.S. and abroad.
- Environmental data development and public outreach aimed at informing the public of risks of overexposure to UV radiation.
- Helping facilitate earlier voluntary phaseout of CFCs and HCFCs in developing countries.

In addition, EPA continues to provide support to the Montreal Protocol Multilateral Fund. Because the ozone layer depends on compliance by all countries, under the Montreal Protocol, the U.S. and other developed countries support the efforts of developing countries to convert to alternatives to ODSs. This is done primarily through programs supported by the Protocol's Multilateral Fund. When

fully implemented, the activities will annually prevent emissions of over 90,000 metric tons of ODSs. This is about one-third of developing country use of these chemicals.

Our programmatic approach emphasizes pollution prevention. For example, our National Emission Reduction Program requires recycling of ODSs, primarily in the air-conditioning and refrigeration sectors. In addition, hydrofluorocarbons (HFCs) will be recycled due to their global warming potential, as required under the Clean Air Act. The Significant New Alternatives Policy (SNAP) program will oversee developing alternatives, review the health and environmental effects of alternatives, and restrict those that, on an overall basis, are more risky than other alternatives for the same application. The SNAP program will increasingly review substitutes and alternatives for the HCFCs. The Stratospheric Protection Program, with the help of other Federal agencies, will also continue to facilitate the transition away from remaining uses of other ODSs, such as methyl bromide.

The Agency will continue its focus on CFC phase-out programs with priority countries. Most of these activities are part of the Agency's general environmental cooperation and capacity building efforts with developing countries.

FY 2000 Change from FY 1999 Enacted

EPM

- Total payroll costs for this objective will increase by \$86,500 to reflect increased workforce costs.
- EPA will increase its investment in the Montreal Protocol Multilateral Fund over the 1999 enacted level by \$9,638,000, to a total 2000 request of \$21,000,000. This investment will help reduce the U.S. arrearage on past dues to the Montreal Protocol Multilateral Fund.
- This objective will also invest \$223,000 in two areas. The SunWise School Program is an environmental and public-health campaign to help protect young children from over-exposure to the sun. The ultimate goal of SunWise is to provide the public with useful information that they can use to modify their sun-exposure behavior. Such behavior modification will, in the long-term, have a positive impact on the incidence of malignant melanoma and other forms of skin cancer, as well as other health effects. In addition, reduction in the consumption of methyl bromide will require considerable outreach to the farming and agricultural sectors as well as continued investment in identifying alternatives. EPA will have to closely monitor the scientific, technical, and legal issues surrounding the reduction of methyl bromide.

Annual Performance Goals and Performance Measures

Restrict Domestic Consumption Class II HCFCs

In 2000	Restrict domestic consumption of class II HCFCs below 208,400 metric tonnes (MTs) and restrict domestic exempted production and import of newly produced class I CFCs and halons below 130,000 MTs.
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Restrict Domestic Consumption Class II HCFCs – Continued

In 1999 Ensure that domestic consumption of class II HCFCs will be restricted to below 208,400 MTs and domestic exempted production and import of newly produced class I CFCs and halons will be restricted to below 130,000 MTs.

Performance Measures	FY 1999	FY 2000
Domestic Consumption of Class II HCFCs	<208,400 MTs	<208,400 MTs
Domestic Exempted Production and Import of Newly Produced Class I CFC s and Halons	<130,000 MTs	<130,000 MTs

Baseline: Performance Baseline: The base of comparison for assessing progress on the 2000 annual performance goal is the domestic consumption cap of class II HCFCs as set by the Parties to the Montreal Protocol. Beginning on January 1, 1996, the cap was set at the sum of 2.8 percent of the domestic ozone depletion potential (ODP)-weighted consumption of CFCs in 1989 plus the ODP-weighted level of HCFCs in 1989. Consumption equals production plus import minus export.

Restrict methyl bromide domestic consumption

In 2000 Restrict domestic consumption of methyl bromide by 25% of baseline levels.

In 1999 Restrict domestic consumption of methyl bromide by 25% over baseline levels.

Performance Measures	FY 1999	FY 2000
Domestic Consumption of Methyl Bromide	<19,200 MTSL	
Domestic Consumption of Methyl Bromide Restricted to a Percentage of Baseline		<19,200 MTSL

Baseline: Performance Baseline: The Clean Air Act requires the U.S. to end production and import of methyl bromide by 2001. The Montreal Protocol requires all developed countries, including the U.S., to reduce methyl bromide consumption by 25 percent in 1999. The baseline for assessing progress on the FY2000 performance goal was determined by calculating the production and import of all U.S. companies in 1991.

Montreal Protocol

In 2000 Provide assistance to at least 75 developing countries to facilitate emissions reductions and toward achieving the requirements of the Montreal Protocol.

In 1999 Through our contribution to the Multilateral Fund, assistance will be provided to at least 50 countries working toward achieving the Montreal Protocol.

Performance Measures	FY 1999	FY 2000
Assistance to countries working under Montreal Protocol	50 Countries	75 Countries

Baseline: Performance Baseline: In an average year the Multilateral Fund, created through the Protocol, approves projects to assist over 50 developing countries in their efforts to comply with the phaseout of ODSs.

Verification and Validation of Performance Measures

Stratospheric ozone measurements are based on atmospheric models and data provided by the National Aeronautics and Space Administration (NASA), the National Oceanic and Atmospheric Administration (NOAA), the World Meteorological Organization, and the United Nations Environment Programme (UNEP) where available. Actual measurements of stratospheric ozone will be made by NASA's Upper Atmospheric Research Satellite and the Total Ozone Mapping Spectrometer, and also by the Solar Backscatter Ultraviolet Spectrometer-2 and Operational Vertical Sounder instruments on the NOAA Polar Orbiting Environmental Satellite and subsequent National Polar-orbiting Operational Environmental Satellite.

Progress on the restriction of domestic exempted production and importation of newly produced class I CFCs, halons, methyl chloroform, carbon tetrachloride, and HBFCs, will be tracked by monitoring industry reports in compliance with EPA's phaseout regulations. Progress on the restriction of domestic production and importation of methyl bromide and class II HCFCs will be tracked by monitoring industry reports in compliance with EPA's phaseout regulations. Production data is cross-checked through facility inspections and comparison with International Trade Commission data. Import data is cross-checked by comparison with U.S. Customs information. Results from the tracking system are compiled and published in annual UNEP reports.

Progress on international implementation goals will be measured by tracking the number of countries receiving assistance, dollars allocated to each, and the expected reduction in ODSs in assisted countries.

Behavior modification as a result of the SunWise School Program will be measured through surveys of children and caregivers from SunWise Designated Schools. The surveys will provide information on sun exposure behavior and attitudes before and after implementation of the program.

Coordination with Other Agencies

In an effort to curb the illegal importation of ODSs, an interagency task force has been formed consisting of EPA, Department of Justice, Customs, State Department, Commerce, and Internal Revenue Service. The venting of illegally imported chemicals has the potential to prevent the U.S. from meeting the goals of the Montreal Protocol to restore the ozone layer. EPA is also working with United States Department of Agriculture to facilitate research and development of alternatives to methyl bromide. The Agency coordinates with NASA and NOAA to monitor the state of the ozone layer.

Statutory Authorities

Clean Air Act (CAA) Title VI, Parts A and D (42 U.S.C. 7401-7431, 7501-7515)

Pollution Prevention Act (PPA) (42 U.S.C. 13101-13109)

Resource Conservation and Recovery Act (RCRA) sections 3001-3006 and 3017 (42 U.S.C. 6921-6926, 6938)

The Montreal Protocol on Substances that Deplete the Ozone Layer

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Reduction of Global and Cross-border Environmental Risk

Objective # 4: Protect Public Health and Ecosystems From Persistent Toxics

By 2005, consistent with international obligations, the need for upward harmonization of regulatory systems, and expansion of toxics release reporting, reduce the risks to U.S. human health and ecosystems from selected toxics (including pesticides) that circulate in the environment at global and regional scales. Results will include a 50% reduction of mercury from 1990 levels in the U.S. Worldwide use of lead in gasoline will be below 1993 levels.

Resource Summary

(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Protect Public Health and Ecosystems From Persistent Toxics	\$6,883.2	\$4,125.8	\$6,943.1	\$2,817.3
Environmental Program & Management	\$6,883.2	\$4,125.8	\$6,943.1	\$2,817.3
Total Workyears:	39.3	27.9	30.0	2.1

Key Programs

(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Global Toxics	\$3,311.6	\$932.3	\$2,967.0
Partnership with Industrial and Other Countries	\$0.0	\$100.0	\$356.4

FY 2000 Request

Many human health and environmental risks to the American public originate outside our borders. Man-made boundaries do not stop the movement of pollution. Many pollutants travel easily across borders - via rivers, air and ocean currents, and migrating wildlife. Even in remote Antarctica, industrial chemicals such as polychlorinated biphenyls (PCBs) have been found in the tissues of local wildlife. Reducing pollution around the world benefits the U.S. and as a result EPA is committed to reducing pollution globally. Further, differences in public health standards can contribute to global pollution. A chemical of particular concern to one country may not be controlled or regulated in the

same way by another. Harmonization of national standards assists in reducing global pollution by increasing the number of health and ecological effects any single country may be examining; it also lowers barriers to trade and commerce as countries accept the validity of another's screening or other standards.

EPA's activities under this objective give priority to selected chemicals which can persist, bioaccumulate and are highly toxic (PBTs). These chemicals do not break down naturally in the environment. For this reason, PBTs, or POPs as they are known internationally (persistent organic pollutants) are very mobile, moving great distances along wind and ocean currents, thereby posing serious risks to human health and the ecosystem in the U.S. and world-wide. PBT's also enter the food chain, accumulating by degrees in the shellfish, fish, birds and animals that are exposed directly or indirectly through their diets.

EPA is working to reduce the risk from PBTs on several fronts: (1) reducing the release and transboundary movement of PBTs; (2) reducing the levels of exposure to, and adverse effects resulting from these PBTs; (3) assisting additional countries around the world to monitor releases and also manage their use of PBTs; and (4) increasing confidence that consistent PBT obligations will be met. For each of these efforts, the Agency targets the highest risk or greatest concerns first. Among PBT's, certain chemicals pose the greatest hazard due to their highly toxic effects on human health: these include PCBs, dioxins/furans, DDT, mercury, and lead. In each negotiated agreement or offer of technical assistance, these chemicals figure first. In addition, certain populations are especially vulnerable, and receive priority consideration: children exposed to lead in gasoline, coastal populations with diets heavy in fish or marine mammals which may contain toxins, and endangered wildlife which consume and biomagnify PCBs, DDT or other harmful PBTs.

International agreements form the vehicle for many protective standards. In 2000, EPA will continue to play a key role in the Administration's efforts to successfully conclude a number of regional and global negotiations to establish voluntary and legally binding obligations to control and more safely produce, use, store and dispose of selected PBTs. In addition, the Agency will expand ongoing programs to build the capacity of other countries to reduce risks associated with PBTs, consistent with the obligations of international agreements already in place or now under negotiation.

International Conventions for Persistent Organic Pollutants (POPs) and Prior Informed Consent (PIC)

Persistent organic pollutant (POPs) are chemicals of concern that are persistent, toxic and bioaccumulative. When POPs are transported across international boundaries, some may pose a threat to global health and the environment. Negotiations are underway to complete a legally binding regional protocol for the elimination and/or control of specified POPs. EPA is developing the regional POPs protocol under the United Nations Economic Commission for Europe's Convention on Long-Range Transboundary Air Pollution (LRTAP). To facilitate voluntary information exchange and import controls of banned or severely restricted chemicals among countries, EPA is also engaged in the process of completing a legally binding convention, commonly called Prior Informed Consent (PIC), outlining requirements for the export and import of selected chemicals.

To reach the agreement on PICs and POPs, EPA must be involved with other Federal agencies and external stakeholders, such as Congressional members and staff, the Department of State, industry, and environmental groups, to convey the U.S. approach and concerns. The Agency also needs to ensure that the list of chemicals and the criteria and process for evaluating future chemicals are based on sound science. EPA will expand efforts with the United Nations Environment Program (UNEP), as negotiations for a regional treaty on POPs conclude and negotiations for a global treaty commence. Coordination with the United Nations Economic Commission for Europe protocol on Long Range Transport of Air Pollutants (LRTAP) will continue. The work on the regional and global POPs agreements in 1998 and 1999 will result in the overall POPs agreement reached and signed by 2001.

The regional LRTAP POPs protocol may result in banning or restricting manufacture and/or use of approximately 15 industrial chemicals and pesticides. Also under discussion are export and import restrictions/controls and emission release restrictions, micro contaminant issues and waste management issues. Non-pesticide chemicals under consideration include PCBs, polyaromatic hydrocarbons (PAHs), short-chained chlorinated paraffins (SCCP), and hexabromobiphenyl. The global POPs list initially covers some 12 chemicals and pesticides, which may not be the same chemicals as those in the LRTAP POPs protocol. Once these protocols are completed, the U.S. hopes to sign and ratify them.

A new program proposed for 2000, targets those Sub-Saharan Africa (SSA) countries and specific sectors (i.e., refineries, mining companies, and stockpilers of agricultural chemicals) which are major contributors to globally circulating chemical/toxic risks, focusing on pesticides, mercury and lead. This program will address growing health and ecosystem risk from rapid urban and industrial development and SSA, and support U.S. foreign policy and Presidential commitments of engagement with SSA through a community empowerment approach. Targeted countries and cities will be given information which will assist in implementing environmental regulatory systems on par with U.S. and international standards. Activities that may be included are pesticide information exchange and training, management of obsolete pesticide stockpiles, lead risk reduction, pollutant release and transfer register development and industrial sector environmental improvement.

Unless controls are put in place internationally, environmental loadings of PBTs and the resultant health and environmental risks they pose will increase over time through expanded production, trade, and use of these substances. Yet many countries currently are unwilling or unable to commit to such controls. For example, many areas continue to manufacture and use DDT. Without suitable and affordable substitutes in tropical nations, and the ongoing problem in most countries with safely managing the use of PBTs. The FY 2000 international annual performance goals build on efforts initiated in FY 1999 to directly engage other countries to reduce the global risk posed by PBTs, heavy metals, POPs, and other chemicals of concern.

Harmonization of Test Guidelines

The goal of international harmonization of test guidelines is to facilitate international trade while maintaining environmental protection. Harmonization also reduces the burden on chemical companies and other industries, which otherwise must perform separate, sometimes only slightly different, repeated testing in order to satisfy the regulatory requirements of different jurisdictions both within

the United States and internationally. Harmonization also expands the universe of toxic chemicals for which needed testing information is available, and fosters efficiency in international information exchange and mutual international acceptance of chemical test data.

Test Guidelines are collections of methods for testing chemicals and chemical preparations, such as pesticides and pharmaceuticals. The purpose of the testing is to assess hazard or toxicity. Each Test Guideline provides instructions on how a specific type of test should be performed. Typically, each country develops its own set of test guidelines in line with its internal legislative requirements and priorities. Just within the United States' environmental protection framework, different statutes require different levels of protection, or different metrics of measurement. In 2000, EPA will continue to emphasize harmonization with the United States' largest trading partners, cooperating closely with other Federal agencies and the Organization for Economic Cooperation and Development (OECD). In fact, EPA serves as a major source of scientific expertise and review in updating guidelines with the OECD.

EPA has published 97 guidelines in the areas of physical chemistry, ecotoxicity, environmental fate and human health. OECD has published 77 guidelines in the same four areas. In the pesticides program a total of 170 test guidelines have been published which include guidelines for the above four areas plus other specific requirements for the evaluation of pesticides (e.g., product identity, composition, application exposure).

Currently, all of the physical/chemical properties and environmental fate guidelines, 30 health effects guidelines and six ecotoxicity test guidelines have been harmonized between EPA and OECD. Forty-five health effects guidelines and thirteen ecotoxicity guidelines have been harmonized between EPA's toxic substances and pesticides programs. It is expected that one ecotoxicity and two health effects guidelines will be added in 2000. Some of these test guidelines incorporate recent and significant advances in the scientific knowledge and methodologies compared with older existing OECD guidelines, particularly in the areas of neurotoxicity, developmental neurotoxicity, and developmental and reproductive biology. EPA is currently leading the effort to harmonize these improved guidelines with OECD. EPA expects that by 2005 it will have harmonized all of its environmental toxicity, health effects and fate guidelines with other participating Federal agencies and with the international community via the OECD.

The achievement of the test guideline subobjective will lead to simplified testing requirements for the regulated industry, with unified guidelines that are acceptable to a wide array of Federal agencies and countries. This will in turn result in less confusion within regulated industries, increase efficiency in collecting test data and in assessing risk, avoid duplication of effort, reduce use of animals in testing, and reduce expense.

Development of Pollutant Release and Transfer Registries (PRTRs)

Pollutant Release and Transfer Registries (PRTRs) is the international term for emissions inventories. The Toxic Release Inventory (TRI) is the United States' version of a PRTR. International attention focused on PRTRs in 1992 when the Earth Summit (held in Rio de Janeiro) encouraged all nations to establish these systems as an integral role in the sound management of

chemicals. In North America, all three North American Free Trade Agreement (NAFTA) nations, Canada, the United States and Mexico, have established emissions inventories. There are currently eight nations with PRTRs and many more that are in the process of developing them. Still more countries have expressed an interest in developing such inventories. Fostering the public's right-to-know in other countries can help reduce pollution generated in these countries, just as it has in the United States.

EPA remains involved at all levels of the PRTR effort. This involvement includes country-to-country talks and active participation in international meetings and workshops. EPA works closely with the OECD, the United Nations Institute for Training and Research (UNITAR), and the PRTR Coordination Workgroup on ways to facilitate the public's right-to-know and the importance of collecting data on air, water, land and off-site transfers. As the OECD takes steps to integrate PRTR data with risk assessment and risk management activities, EPA will participate to ensure that the resulting decisions meet Agency objectives. To foster the public's right-to-know around the world, EPA will provide financial or technical assistance to help nations develop PRTRs, providing financial or technical assistance.

By 2005 EPA expects that all OECD countries will not only have developed PRTRs, but that these inventories will be fully operational. Besides being used for community right-to-know purposes, as TRI is currently used in this country, these registries will help monitor the progress countries make in complying with international agreements, such as the Montreal Protocol (CFC production) and Basel (waste transfer agreements).

International Screening Information Data Set (SIDS)

The U.S. is working with other OECD member countries to implement the International Screening Information Data Set (SIDS) program, a voluntary international cooperative testing program started in 1990. The program's focus is on developing base-level test information (including data on basic chemistry, environmental fate, environmental effects and health effects) for international high production volume chemicals. SIDS data will be used to screen chemicals and to set priorities for further testing and/or assessment. The Agency will review testing needs for 50 SIDS chemicals in 2000.

Bilateral Work with Canada and Mexico

EPA will work with Canada to develop strategies for the remaining uses of two priority chemicals, pentachlorophenol and lindane, both persistent bioaccumulative toxic pesticides. Both chemicals are on the Great Lakes Binational Strategy. In coordination with Mexico, EPA will investigate alternatives for the uses of DDT and chlordane.

FY 2000 Change from FY 1999 Enacted

EPM

- (+\$130,500) increase requested for enhanced International TSCA support including test guideline harmonization and outreach on the Screening Information Data Set project.
- (+\$254,700) requested support for implementation of delayed technical assistance for countries working to improve their ability to track pollution transfers
- (+\$16,000) Increase for workforce cost of living
- (+\$2,291.1) Restored resources, will support efforts in mercury monitoring, international harmonization of monitoring standards, and emission control technology transfer for mercury. Long-range transboundary mercury atmospheric monitoring and modeling is proposed for Barrow, Alaska in support of the Arctic Council and its Arctic Monitoring and Assessment Program.

Annual Performance Goals and Performance Measures

Evaluate Domestic Suitability of International Consensus Testing

In 2000	Evaluate the domestic suitability of international consensus testing decisions made in the OECD International Screening Information Data Set (SIDS) program and obtain needed testing as required.
In 1999	Evaluate the domestic suitability of international consensus testing decisions made in the OECD SIDS program and obtain needed testing as required.

Performance Measures

	FY 1999	FY 2000
Complete the review of testing needs for chemicals processed through the OECD- sponsored SIDS program	30 Testing reviews	50 Testing reviews.
Complete OECD harmonization	10 test guidelines	10 test guidelines

Baseline: Guideline harmonization baseline is 82 test guidelines (health ecosystem, exposure, physical and chemical properties) and 32 in draft. Complete testing and data on 25 chemicals processed through the OECD-sponsored SIDS program in 1998.

Conclude International Negotiations on POPs

In 2000	Successfully conclude international negotiations on a global convention on Persistent Organic Pollutants (POPs) reaching agreement on POPs selection criteria, technical assistance, and risk management commitments on specified POPs.
In 1999	Obtain international agreement on criteria for selecting Persistent Organic Pollutants (POPs) to be covered in a new global POPs treaty, and on capacity building activities to support the convention's implementation

Performance Measures

Agreed USG policies on selection criteria for Persistent Organic Pollutants

FY 1999

09/30/1999 negotiation

FY 2000

Production of a final agreed convention text

09/30/2000 report

Agreement on selection criteria and methodology

09/30/2000 report

Baseline: This is a new global POPs treaty; therefore, a baseline has not been established.**Verification and Validation of Performance Measures:**

The annual performance goals and measures identified under this objective are expressed as the completion of explicit tasks. These measures require assessment by program staff and management. Verification of these measures does not involve any pollutant database analysis, but will require objective assessment of tasks completed, compliance with regulatory development and authority delegation schedules, and the satisfaction of U.S. environmental negotiating objectives. Harmonization of testing guidelines requires scientific analysis as to equivalency of testing methods under consideration.

Coordination with Other Agencies:

To reach the agreement on POPs and PBTs, EPA must be involved with other Federal agencies, and external stakeholders, such as Congressional staff, industry, and environmental groups, to convey the U.S. approach and our concerns. EPA needs to ensure that the list of chemicals and the criteria and process for evaluating future chemicals are based on sound science. The Agency may typically coordinate with the Food and Drug Administration (FDA), FDA's National Toxicology Program, the Centers for Disease Control/Agency for Toxic Substances and Disease Registry (CDC/ATSDR), the National Institute of Environmental Health Sciences (NIEHS) and/or the Consumer Product Safety Commission (CPSC) on matters relating to OECD test guideline harmonization.

EPA's objective is to promote improved health and environmental protection world-wide. The success of this objective is dependent on successful coordination not only with other countries, but with various international organizations such as the Intergovernmental Forum on Chemical Safety (ICFS), the North American Commission on Environmental Cooperation (NACEC), the Organization for Economic Cooperation and Development's (OECD), and the CODEX Alimentarius Commission. The North American Free Trade Agreement and cooperation with Canada and Mexico play an integral part in the harmonization of data requirements.

The Agency's goal to develop common or compatible international approaches to pesticide review, registration and standard-setting extends to our international partnerships. The partnerships may be grouped into 3 broad categories: (1) policy, (2) programmatic, and (3) capacity building. The Agency, for example, worked closely with other member countries of the OECD to establish a pesticide forum to bring government pesticide regulators together to address common problems and achieve greater harmonization of policies and procedures.

The forum works on five major areas: re-registration, data requirements, risk reduction, test guidelines and hazard assessment. The OECD plans to include establishing internationally harmonized labeling for pesticides.

EPA continues to participate actively in the prior informed consent (PIC) agreement, a United Nations Environment Programme (UNEP)) and U.N. Food and Agriculture Organization (FAO) to promote safe management of chemicals in international trade. PIC provides for notification from countries to the U. N. about pesticides and chemicals that have either been banned or severely restricted for health and/or safety reasons. The Agency also has worked with the Codex Alimentarius Commission to improve the scientific basis and timeliness of Codex decisions, and boost public participation in the decision making processes.

At the EPA regional level, EPA also worked with the NACEC to deal with chemical pollutants of concern to Canada, Mexico, and the United States. The commission approved regional action plans to reduce the use of DDT and chlordane throughout North America.

Statutory Authorities:

Pollution Prevention Act (PPA) (42 U.S.C. 13101-13109)

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) sections 3,4,5,6,10,11,18,20,23,24,25,30 and 31 (7 U.S.C. 136a, 126a-1, 126c, 136d, 136h, 136i, 136p, 136r, 136u, 136v, 136w, 136w-5 and 136w-6)

Emergency Planning and Community Right-to-Know Act (EPCRA) section 313 (42 U.S.C. 11023)

Toxic Substances Control Act (TSCA) sections 4, 5, 6, 12, and 13 (15 U.S.C. 2603, 2604, 2605, 2611, 2612)

Clean Water Act (CWA) (33 U.S.C. 1251-1387)]

Clean Air Act (CAA)

Federal Food, Drug and Cosmetic Act (FFDCA).

Resource Conservation and Recovery Act (RCRA)

North American Agreement on Environmental Cooperation (NAAEC)

1996 Habitat Agenda, paragraph 43bb

U.S./Canada Agreements on Arctic Cooperation

1989 US/USSR Agreement on Pollution

1991 U.S./Canada Air Quality Agreement

1978 U.S./Canada Great Lakes Water Quality Agreement

1909 Boundary Waters Agreement

World Trade Organization Agreements

North American Free Trade Agreement

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Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Reduction of Global and Cross-border Environmental Risk

Objective # 5: Achieve Cleaner and More Cost-Effective Practices

By 2005, increase the application of cleaner and more cost-effective environmental practices and technologies in the U. S. and abroad through international cooperation.

Resource Summary

(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Achieve Cleaner and More Cost-Effective Practices	\$11,136.2	\$9,212.5	\$10,672.1	\$1,459.6
Environmental Program & Management	\$11,136.2	\$9,212.5	\$10,672.1	\$1,459.6
Total Workyears:	39.6	51.5	45.5	6.0

Key Programs

(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Environment and Trade	\$3,178.0	\$4,514.6	\$4,236.8
Partnership with Industrial and Other Countries	\$7,800.4	\$4,546.6	\$6,272.2

FY 2000 Request

EPA will continue its efforts to (1) protect human health and global, regional and local ecosystems through enhanced environmental management capabilities in other industrial and priority countries; (2) reduce costs of environmental protection in the U.S. through international sharing of information and costs in environmental policy and research programs; (3) promote environmentally sound trade worldwide through participation in multilateral environmental agreements, including trade regimes, and the strengthening of global environmental institutions; and (4) advance U.S. foreign policy, economic, national security, humanitarian and other interests abroad.

In 2000, the Agency will: (1) address common environmental problems at the border areas through the North American Commission for Environmental Cooperation, especially those relating to NAFTA, among the United States, Canada, and Mexico. The Agency will also work with counterparts in Canada and Mexico to develop comparable approaches to air quality and emissions monitoring in North America as well as procedures for transboundary environmental impact assessments. Additionally, combined efforts are underway to examine the impact on the environment of trade and the development of trilateral plans for the sound management of chemicals; (2) enhance cooperation through the World Trade Organization (WTO) and other multilateral fora to ensure that domestic and international environmental laws, policies and priorities are recognized and, where appropriate, promoted within the multilateral trading system; (3) promote cooperation with other federal agencies, states, business and environmental NGOs to ensure an appropriate balance between the promotion of trade in U.S. goods and the need to protect the U.S. domestic environment and achieve global environmental policy goals; (4) enhance cooperation with other federal agencies, states, local groups, and the business community in promoting the worldwide dissemination of environmental technologies and services; (5) assist in implementation of bilateral agreements with key countries facilitating scientific, technical and other forms of environmental cooperation; (6) provide multilateral collaboration in coordinating policies and in implementing cooperative research and development programs; (7) provide international technical assistance, training, information exchange and other capacity-building programs.

The international drinking water base resources will focus on applying cleaner and more cost-effective environmental practices and technologies by improving watershed protection and drinking water quality in partner countries. The source water protection project will provide partners with low-cost methods of preventing drinking water well contamination, of reducing non-point-source pollution to surface waters, and other means of improving the quality of downstream waters used for drinking. The treatment plant optimization project will improve the performance of existing drinking water infrastructure in partner countries by identifying and implementing low-cost plant management and operations changes. The public/private partnership program in Puerto Rico will introduce low-cost water disinfection methods to small distribution systems, thereby improving drinking water quality.

Providing access to microbiologically safe drinking water and the protection of drinking water sources in developing nations remain top priorities. Microbiologically unsafe drinking water chiefly results from poor environmental management, inadequate water infrastructure, or poor maintenance and operation of the water infrastructure. Health impacts and societal costs, including infant mortality and lost work force productivity, are the outgrowths of these conditions. In 2000, this project will identify critical health effects of poor quality water in targeted communities, and hopefully will demonstrate how project activities are reducing the incidence of these health problems. By doing so, these efforts will focus attention on the *outcome* of the environmental improvements being implemented. These improvements directly support the goal of applying “cleaner and more cost-effective environmental practices” by improving drinking water treatment methods, by protecting drinking water sources, and by introducing low-cost water disinfection techniques.

The Agency will address concerns for exposure of children to environmental tobacco smoke and other environmental threats. Using an international, peer reviewed technical scientific document, compiled by the World Health Organization and published in 1999, the focus of our international program is to improve the protection of children's health from environmental threats by: prioritizing the research needs identified, seeking to allocate research among countries and international organizations, agreeing on time lines, and developing international reporting mechanisms. The program will also identify best public awareness practices, select countries or regions that need and want increased capacity to reduce exposures to environmental tobacco smoke (ETS), and partner with other organizations and countries to improve information dissemination and public education on the health impacts of children from ETS.

By increasing knowledge through research and exchange of results on health impacts of childhood exposure to ETS, policy-makers in the U.S. and worldwide will be better informed on how best to protect the public health. This will result in improvements in policy development and improved community awareness, which will lead to reduced exposure of children to ETS. By reducing exposure to this key indoor air pollutant, we expect to see measurable improvements over the long run in child health, as indicated by morbidity and mortality data on acute respiratory infections, in particular asthma. A secondary effect will be to increase awareness of indoor air quality in general, leading to increased attention given to the other primary indoor air contaminant in less developed countries, indoor use of biomass fuel. Reducing exposure to both ETS and biomass fuels should have significant, measurable results in the health status of children.

A new effort will be initiated in Sub-Saharan Africa, outside of South Africa, in developing cleaner and more cost-effective environmental management capacity. Corporate responsibility and P2E2 (Pollution Prevention and Energy Efficiency) are likely to be the most promising targets of opportunity, allowing us to leverage significant private sector support and addressing critical global and local problems which are currently almost entirely ignored by donors and governments. Another target will be clean water and sanitation technical and policy assistance in urban areas. In order to measure results in out years, 2000 resources will be devoted to identifying geographic and sectoral targets of opportunity and gathering baseline information.

This effort will apply EPA technical cooperation tools and information exchange abilities to achieve measurable improvements in environmental protection in target areas. These projects will be replicable and will build in-country capacity such that in out years greater results will be obtained.

FY 2000 Change from FY 1999 Enacted

EPM

- (+\$1,447.8) A restoration of resources from 1999 will support activities described under our international safe drinking water initiative.

Annual Performance Goals and Performance Measures

In 2000 Deliver 30 international training modules; implement 6 tech assistance/ technology dissemination projects; implement 5 cooperative policy development projects; & disseminate info products on US environmental technologies and techniques to 2500 foreign customers.

In 1999 Deliver 30 international training modules; implement 6 tech assistance/ technology dissemination projects; implement 5 coop policy development projects; & disseminate info products on US environmental technologies and techniques to 2500 foreign customers.

Performance Measures	FY 1999	FY 2000
Number of training modules delivered	30 modules	30 modules
Number of tech assistance or tech dissemination projects carried-out	6 projects	6 projects
Number of cooperative policy development projects implemented		5 projects
Number of info products disseminated to foreign customers	2500 products	2500 products
Number of capacity building activities scheduled for initiation in FY 2000 and beyond	2 report	

Baseline: The purpose of these programs will be to reduce air, water, and waste problems in at least 6 environmentally and geopolitically significant countries and to improve the cost-effectiveness of U.S. domestic programs.

Verification and Validation of Performance Measures

The annual performance goals and measures identified under this objective are expressed as the completion of explicit tasks. These measures will require assessment by program staff and management. Verification of these measures does not involve any pollutant database analysis, but will require objective assessment of tasks completed and the satisfaction of U.S. environmental negotiating objectives.

Coordination with Other Agencies:

USAID, USDOS, USTR, Peace Corp

Statutory Authorities:

EPCRA section 313 (42 U.S.C. 11023)

PPA (42 U.S.C. 13101-13109)

World Trade Organization Agreements

North American Free Trade Agreement

North American Agreement on Environmental Cooperation
Treaties:

- The Boundary Waters Treaty of 1909
- 1987 Great Lakes Water Quality Agreement
- 1997 Canada-U.S. Great Lakes Binational Toxics Strategy